DOCUMENT RESUME

ED 239 566	HE 016 990

AUTHOR	Mentkowski, Marcia; And Others
TITLE	Developing a Professional Competence Model for Management Education. Final Report, Research Report Number Ten.
INSTITUTION	Alverno Coll., Milwaukee, Wis.
SPONS AGENCY	National Inst. of Education (ED), Washington, DC.
PUB DATE	82
GRANT	NIE-G-77-0058
NOTE	325p.; For related documents, see HE 016 980-989.
PUB TYPE	Reports - Research/Technical (143) -- Tests/Evaluation Instruments (160)
EDRS PRICE	MF01/PC13 Plus Postage.
DESCRIPTORS	Administrators; *Business Administration Education; College Curriculum; *Competence; Competency Based Education; Educational Objectives; *Females; Higher Education; *Job Performance; *Management Development; *Models; Occupational Surveys; Performance Factors; Personnel Evaluation; Research Methodology; Work Attitudes
IDENTIFIERS	*Alverno College WI

ABSTRACT

Abilities or competences that ensure effective managerial performance were studied, and a model of effective managerial performance was developed. Performance, perceptions, and careering and professional development of 103 women managers and executives from 53 Milwaukee private corporations were described using a recently developed performance measurement system. In addition to the competence model, over 500 behavioral examples that can be used in instruction and assessment were obtained. Women managers were found to demonstrate intellectual and entrepreneurial abilities to the same degree as they showed interpersonal abilities. Based on factor, cluster, and path analyses, it was determined that competences are largely independent of each other but some are best learned in sequence. For example, a manager's ability to initiate rests on intellectual skills. It is concluded that education should include learning to integrate abilities, to test them in a range of work situations, and to critically appraise one's performance. In addition, it is suggested that there are broad competences that will generalize across situations and contexts. Information is included on the study methodology and the research instruments, which are appended. (Author/SW)

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DEVELOPING A PROFESSIONAL COMPETENCE MODEL FOR MANAGEMENT EDUCATION

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Office of Research & Evaluation/Department of Business & Management,
ALVERNO COLLEGE

FINAL REPORT TO THE NATIONAL INSTITUTE OF EDUCATION: RESEARCH REPORT NUMBER TEN

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Funded by a grant from the National Institute of Education:
Careering After College: Establishing the Validity of Abilities
Learned in College for Later Success
(NIE–G–77–0058)

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An overview and rationale for our approach to the study of college outcomes, and a summary of the results from the following series of ten research reports, are found in:

Marcia Mentkowski and Austin Doherty. Careering After College: Establishing the Validity of Abilities Learned in College for Later Careering and Professional Performance. Final Report to the National Institute of Education: Overview and Summary. Milwaukee, WI: Alverno Productions, 1983.

Research Reports:

One: Friedman, M., Mentkowski, M., Earley, M., Loacker, G., & Diez, M. Validating Assessment Techniques in an Outcome-Centered Liberal Arts Curriculum: Valuing and Communications Generic Instrument, 1980.

Two: Friedman, M., Mentkowski, M., Deutsch, B., Shovar, M.N., & Allen, Z. Validating Assessment Techniques in an Outcome-Centered Liberal Arts Curriculum: Social Interaction Generic Instrument, 1982.

Three: Assessment Committee/Office of Research and Evaluation. Validating Assessment Techniques in an Outcome-Centered Liberal Arts Curriculum: Insights From the Evaluation and Revision Process, 1980.

Four: Assessment Committee/Office of Research and Evaluation. Validating Assessment Techniques in an Outcome-Centered Liberal Arts Curriculum: Integrated Competence Seminar, 1982.

Five: Assessment Committee/Office of Research and Evaluation. Validating Assessment Techniques in an Outcome-Centered Liberal Arts Curriculum: Six Performance Characteristics Rating, 1983.

Six: Mentkowski, M., & Strait, M. A Longitudinal Study of Student Change in Cognitive Development and Generic Abilities in an Outcome-Centered Liberal Arts Curriculum, 1983.

Seven: Much, N., & Mentkowski, M. Student Perspectives on Liberal Learning at Alverno College: Justifying Learning as Relevant to Performance in Personal and Professional Roles, 1982.

Eight: Mentkowski, M., Much, N., & Giencke-Holl, L. Careering After College: Perspectives on Lifelong Learning and Career Development, 1983.

Nine: Mentkowski, M., DeBack, V., Bishop, J., Allen, Z., & Blanton, B. Developing a Professional Competence Model for Nursing Education, 1980.

Ten: Mentkowski, M., O'Brien, K., McEachern, W., & Fowler, D. Developing a Professional Competence Model for Management Education, 1982.

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ABSTRACT

This study identifies abilities or competences that ensure effective managerial performance and sequences them to create a model of effective managerial performance. Performance, perceptions and careering and professional development of 103 women managers and executives from 53 Milwaukee private corporations are described and related using a recently developed performance measurement system. Three outcomes result: a competence model of effective managerial performance for improving management programs; a pool of over 500 behavioral examples set within particular contexts that can be used in instruction and assessment; and better advice for women students seeking examples of careering and professional development and how it relates to effective performance in the managerial role.

No one competence dominates the performance of these managers. They demonstrate abilities across the broad spectrum of interpersonal, intellectual, entrepreneurial and socio-emotional abilities. Women managers demonstrated intellectual and entrepreneurial abilities to the same degree as they demonstrated interpersonal abilities. Educators creating sequential management curricula and managers planning their own professional development can benefit by knowing whether some competences are prerequisites for others. Several factor, cluster and path analyses were performed. Competences are in the main independent of each other but some are best learned in sequence. A manager's ability to initiate rests on intellectual skills; ability to get the job done rests on people skills. Underlying these is self-assessment, the ability to learn from one's experience.

Abilities effective managers judge as critical to outstanding performance are generally the ones they perform in day to day situations. Two abilities important to outstanding performance according to managers and that were not performed often in this study are using networking and negotiating win-win situations. Demonstrating self-control and positive regard for others, abilities demonstrated often, are apparently more critical to effective managerial performance than managers judge them to be.

Implications for management education are that programs teach and assess for a range of complex abilities. Traditional management education has focused on developing particular technical skills yet specialized knowledge did not play a critical or decisive role in the situations described by these effective managers. Education that prepares for the future will include learning to integrate abilities, to test them out in a range of work situations and to critically appraise one's own performance. Both work environment and job function affect the extent to which these abilities are demonstrated; this suggests that adaptability of one's abilities is critical for effective performance. There are, however, a common set of broad competences educators can expect will generalize across situations and contexts. Abilities on which the Alverno program is built mesh with those demonstrated by effective managers. The study provides a cadre of interview material for building realistic and relevant instructional experiences, a model for sequencing competences, and insights into careering for structuring career development activities.

ACKNOWLEDGEMENTS

We thank the organizations in the Milwaukee business community who opened their doors to us. And we trust that this report will adequately synthesize the contributions of women managers and executives who contributed descriptions of what they actually do that makes them effective. They opened their minds to provide the wealth of experience and insight that will assist us to be more effective in preparing their future colleagues.

We acknowledge the assistance of President Joel Read, who initially contacted each organization, and the Alverno Board of Trustees and other college personnel who reviewed and critiqued our procedures. The Department of Management Advisory Council identified women managers and executives in Milwaukee. The Department of Management Advisory Council, made up of men and women business executives in Milwaukee, were invaluable in helping us to create the Management Performance Characteristics Inventory, identifying women managers, and critiquing our procedures. We also had help from women manager professional groups in the city. Our Office of Research & Evaluation Advisory Council, including Joel Moses of American Telephone and Telegraph, Donald Grant of the University of Georgia, and Milton Hakel of Ohio State University gave us advice and materials, and challenged and supported our efforts.

CONTRIBUTORS

Mary Ellen DeHaven was interviewer for the project. With her extensive background and expertise as a personnel manager, she brought the necessary ingredients to building a bridge between the academic world and the organizations, managers and executives we contacted for contributions to this work. Her insightfulness and dedication to communicating what she saw and heard was essential to the quality of the interview interpretation.

Robert Birney, Assistant Professor of Management, first researched the likelihood that we could identify and interview a large group of managers. He also contributed to the development of the Management Performance Characteristics Inventory, and is organizer and liaison to the Management Advisory Council, whose assistance to our study was so important.

James Bishop, formerly a Researcher in the Office of Research & Evaluation, coordinated the data collection, made the Management Performance Characteristics Inventory a reality, and assisted in analyzing the interviews. Elizabeth Davies coordinated the contacting process and also helped create the inventory.

Eunice Monroe was data manager throughout the project, and Laura Giencke–Holl coordinated the production of this report. Their dedication and persistence, high standards for accuracy, and attention to detail give us confidence in the work. Michael Strait brought insight and resourcefulness to the data analysis.

And a special note of thanks to our friend and colleague, George Klemp, Jr. of McBer and Company, who has willingly shared his expertise with Job Competency Assessment throughout the last five years.

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DEVELOPING A PROFESSIONAL COMPETENCE MODEL FOR MANAGEMENT EDUCATION

Marcia Mentkowski **Kathleen O'Brien**
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Office of Research & Evaluation/Department of Business & Management
ALVERNO COLLEGE

INTRODUCTION

Bridging Education and Practice

The goal of this study is to research the performance, perceptions, careering and professional development of effective women managers in order to validate and consequently improve Alverno College's management curriculum (Mentkowski & Doherty, 1977, 1983). This study builds on the expertise and experience of effective managers as a resource for creating programs for management students. Management educators cannot respond effectively to the needs of management as a profession unless they can bridge the gap between educators and practicing professionals, and between professional education and organizational training and development.

Management educators today have an unprecedented opportunity to contribute to professionalizing management. Graduating competent, adaptive managers capable of lifelong learning and professional commitment will enhance the ability of managers and their organizations to contribute to organizational objectives and public policy.

Management educators professionalize management by graduating persons whose abilities are adaptable and relevant to the world of work. These abilities are not personality characteristics. They are broad performance competences like communications and critical thinking that can be learned in college and further developed through on-the-job experience.

Educating for the adaptability of broad competences is needed because the context for today's graduate is changing and unpredictable. Many organizations and institutions may have to change drastically to meet the demands of "future shock," particularly in a technological society experiencing a knowledge explosion. Organizations in both the public and private sector are struggling to regroup in the face of poor economic conditions and challenging foreign competition.

Management educators need to develop persons who can respond to an unpredictable context and changed employment opportunities. Graduates may need to learn a new organization, a new role, a new set of technical skills, even a new career. They must be able to adapt to change and to adapt their abilities to a variety of contexts and situations.

If the context for the graduate is changing, it follows that educational programs must be responsive to these changes. Professional programs are in constant need of refinement, evaluation and continued development. The practicing professional is willing and able to collaborate, to enhance the expertise, standards and credibility of the profession. Practicing professionals at all levels and positions can benefit educational programs with their input.

Research Questions

We believe most management education faculty and practicing professionals would agree with these broad goals. We translated them into these specific research questions.

- What abilities do effective managers perform in day to day situations?
- Is performance on the job related to managers' perceptions of these abilities?
- What abilities will insure effective performance at entry level, but continue to develop through experience so the manager can respond to changing contexts, and take on more responsibilities?
- Just what abilities should be the focus of a management education program preparing graduates for the future...and simultaneously for today's work world? How might these abilities be taught toward and assessed?
- How might educators better prepare women graduates for maximizing their chances for careering rewards and further professional development?

Such questions are the focus of the present study. Clearly they cannot be examined without collaborating with a wide variety of expert sources. These include persons from the many contexts management educators serve--employing organizations, the practicing professional and professional organizations--if management is to become more professionalized and opportunities for graduates developed and maintained. At the same time, educators must not lose sight of the important contributions of the liberal arts college to management curriculum development. The following section describes the importance of relying on both the professional, and the liberal arts college to improve management education.

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Contributions of Practicing Professional Managers to Management Education

Collaboration with practicing professionals insures that faculty stay in touch with professional and organizational contexts and climates. If a broad range of contexts are tapped, abilities taught will be less situation specific, but will be defined in ways that consider the effects of geographic region, organizational structure, nature of the job, and characteristics of employees on the specific expression and effectiveness of abilities demonstrated on the job. All these factors influence performance in a specific context and situation (Riger & Galligan, 1980). Effective managerial performance results from a dialectic between the manager and the situation (Putnam & Heinen, 1978).

Awareness of the multiplicity of contexts and their effect on performance is important since educational institutions are not in a position to change contexts directly. Educators seek change indirectly by developing professionals who are oriented toward service and who bring their abilities, commitment and understanding of context to effect responsible change. Since educators cannot effect change directly, management educators must focus on developing performance characteristics and competences that transfer across situations.

Practicing professionals cannot influence management education directly either. Rather, their influence is felt indirectly, as educators respond to demands for accountability and validity of educational programs. Educators cannot hope to validate either the outcomes taught toward, or the learning process, without comparing these outcomes to professional standards and performance derived and demonstrated external to professional schools. While a current "state of the art" of any profession's standards and practice is not the whole of what must be considered in curriculum development, such inclusion is critical to educational evaluation and program validation which leads to further program development efforts.

Contributions of Liberal Arts Colleges to Management Education

The liberal arts educator has traditionally been responsible for developing persons with the adaptability to respond to changing contexts. But the liberal arts, as well as specialized undergraduate programs such as business management, are being more forcefully challenged to demonstrate that professional preparation is linked to effective performance in the world of work. Criticism has been leveled particularly against traditional liberal arts colleges (Winter, 1979) where "learning for its own sake" (rather than for a profession) is not always linked to performance-oriented settings in business and industry. To respond to the demand for more performance oriented education, undergraduates need opportunities to apply their knowledge in classroom and internship performance situations. They must also be able to transfer these abilities from the college to the work setting. Finally, graduates must be able to continue to develop their knowledge and abilities through their on-the-job experience and, as necessary, further professional education.

One claim for a liberal arts education is that it develops values and abilities that are critical for professional and personal life. In contrast, an organization's personnel development or inservice training programs are less able to concentrate on broad abilities. They teach specific job related rather than professional abilities and technical rather than broad competences. Organizations, faced with situations of rapid change and growing economic constraints, are under enormous pressure to deal with problems from a short run perspective (Graves, 1980). Most organizations, therefore, focus on selection and skill training and are unable to provide in depth opportunities for professional education except through mentoring or internships. Focus on personnel development in addition to selection and skill training is a relatively recent, if not an innovative practice (Moses, Note 1). Conceptualizing the manager as mentor and educator is uncommon (Graves, 1980). Consequently, the liberal arts educator continues to hold a key role in developing professional, broadly educated managers.

The key to professionalizing management lies not only in developing graduates who demonstrate adaptability, transfer of abilities and competences that can be further developed through experience and education. Management educators also need to develop professional persons who demonstrate a disposition toward lifelong learning, commitment to management as a profession, and to benefiting society as a whole. This is particularly important today, since attitudes toward taking on leadership roles entirely motivated by commitment to one's career, or to the organization, seem to be changing. Howard and Bray (1981) report that young managers entering one of America's largest and foremost corporations do not have the motivation to climb the corporate ladder that management recruits had twenty years ago. Nor are younger managers as likely to prefer leadership activities. They do, however, have strong needs for helping others, and have the same interest as prior managers in individual task accomplishment. Corporations may not be able to entice promising managers into leadership roles through an appeal to personal advancement alone. They may be able to motivate persons to take on more responsibility as members of a profession oriented to the development of others and to a long term commitment to society as a whole.

Another issue facing the educator as well as today's management graduate, is the decreased availability of desirable positions, particularly in the public sector. In today's economic climate, graduates may need to take a less than satisfactory position at entry level, and use it to build their own and their organization's expertise. Still, new opportunities for positions in organizations have opened for some groups, opportunities for women managers being a prime example. Thus, management educators have the responsibility to assist women to grasp and maintain these opportunities in the face of overall declining trends. Professional education means developing competences and commitment, and then matching these abilities to realistic opportunities for demonstrating them, for careering and for further professional development.

The authors will use this study to improve the management program at Alverno College, a liberal arts college for women. Consequently, this study will involve women managers as participants, although their performance will be analyzed for managerial abilities performed by men and women managers.

Identifying and Assessing Competences of Effective Managers

An issue in professionalizing management and creating management education curricula is identifying, defining and assessing for competences (American Association of Collegiate Schools of Business, Wingspread Conference 1982). Broad, generic abilities specific to the liberal arts take years to develop, and lower levels of these abilities are usually developed through the general education component of the college curriculum. From a professional education perspective we ask what competences, built on these abilities, should be taught and assessed at the undergraduate level in management?

Professional education in management is usually derived from management and behavioral science theory, and job task analysis studies (Klemp & Sokol, 1980). If we are to incorporate management education into the liberal arts and general education curriculum, and vice versa, we need to derive abilities from practice, not just theory. We also need to educate for abilities that insure lifelong professional growth and development, not just technical skills associated with an entry level position that usually follows graduation. This perspective is critical if graduates are genuinely going to be capable of contributing to organizational objectives, and ultimately influence public policy.

Definition and Assessment of Competence: Alverno College

Alverno's curriculum is related to professionalizing management in the ways stated earlier because the faculty created an outcome centered, competence based curriculum (Alverno College Faculty, 1976, 1979). Faculty identified eight competences taught and assessed through general education in the liberal arts.

- Communications
- Analysis
- Problem Solving
- Valuing
- Social Interaction
- Taking Responsibility for the Environment
- Involvement in the Contemporary World
- Aesthetic Response

These competences are further developed through academic and professional education in specialized areas with a heavy emphasis on "experiential learning" (Doherty, Mentkowski & Conrad, 1978). The experiential dimensions of the curriculum have been expanded such that students in each of the 14 academic and professional departments are immersed in opportunities to experience constraints at work by engaging in off-campus experiential learning (OCEL) where transferring abilities learned in college is a primary goal.

For us, competences are more valid if derived from multiple, expert sources. Alverno management faculty reviewed a wide range of literature and tapped expertise of the practicing professional community in initially creating its management curriculum several years ago when the demand for opportunities for women in management began. But faculty need to continue their search for ways to validate these abilities, to improve instruction, and to expand their ability to advise women who are seeking opportunities to demonstrate their management competences and careering skills. Through this study, management faculty are increasing the number of sources for competence identification, while enhancing the validity of the curriculum, the standards by which students' abilities are judged, and the career advising students receive.

The Alverno Management Program

The Alverno Management Program aims to meet the needs of women seeking entry level management positions as well as those seeking career and professional advancement opportunities. Alverno management faculty focus on developing three of the eight competences as the key managerial competences.

- Analysis
- Problem Solving
- Social Interaction

They form the foundation for developing these chief management program outcomes for students.

- Effectively and consistently integrate and apply managerial concepts and decision-making principles in a variety of problem solving contexts
- Organize, direct and control those activites that lead to task accomplishment and achievement of objectives
- Identify and choose leadership styles which facilitate task accomplishment and achievement of objectives

Both the competences and the major outcomes emerged from faculty raising the question of what abilities should be the focus of a management education program that intends to prepare graduates for the future and the present work world.

Analysis is the ability to identify appropriate management concepts and frameworks for understanding complex business situations. As students develop their abilities they become more sophisticated in their ability to consistently and independently apply these frameworks in order to develop new hypotheses, new relationships and new conclusions. Senior students are expected to work with minimal assistance and direction from the faculty and to be able to independently organize and effectively communicate their analysis to a specified audience.

Problem Solving involves demonstrating both collaboration and independence as key components of a process. Students are expected to integrate their analytic and social interaction skills in order to design and implement a problem solving process in solving complex business/management problems. While dealing with a variety of problem situations, students assume different roles in order to demonstrate their ability to consistently and independently adopt multiple perspectives and adapt to novel situations. Knowledge of relevant management principles is integral to acceptable performance.

Effective Social Interaction integrates interpersonal skills with the problem solving process. Students are expected to resolve interpersonal conflict and assume appropriate leadership styles to get the job done. Learning experiences focus on the ability to deal with a variety of individuals and groups in an objective manner, to use groups as a collaborative problem solving mode and to use interpersonal skills to gather data through interviewing as an independent problem solving mode. Students learn to recognize the components of organizational dynamics and to interact effectively in a professional situation. They should be able to interact with other organizational levels, and assume initiative in dealing with conflict, effectively plan to achieve goals, and demonstrate commitment to their own professional roles. In all cases, performance involves both what the students know and how they use it in situations.

As faculty and as individuals who have had practical managerial experiences, management faculty recognize the need to validate the current management curriculum and to consistently revise it to meet student and community needs. This study represents one of several resources available to bridge the gap between faculty and the professional community in order to answer these questions: What abilities does and should a manager demonstrate on a day to day basis? How can faculty create and integrate learning experiences into the curriculum that will assist students to develop professionally? How can they integrate theory, research and practice?

Because the current management program places such a strong emphasis on the experiential element in the curriculum, the above questions take on significant meaning in terms of how students are taught. The results of the study will have an impact on the case studies, simulations, in-basket exercises, fieldwork, projects, and role-playing exercises that are developed for students in order to achieve department outcomes and professional goals.

Defining Competence as Developmental, Holistic and Generic

At Alverno, abilities or competences are considered to be complex processes, rather than a taxonomy or list of behaviors. The college takes on the responsibility for contributing to the development of lifelong learners, and for being a catalyst for the kind of learning in college that continues after college. Therefore, faculty define competences as developmental, holistic and generic (Mentkowski & Doherty, 1983).

For a competence to be developmental means that it is teachable. Thus, competences are broken open into sequential descriptions or pedagogical levels that describe increasingly complex elements and/or processes which students acquire over time as the result of instruction and where each level requires a more complex demonstration of the ability. Competences that are developmental continue to develop after college, as additional learning experiences on the job or in formal situations contribute toward their greater complexity.

For a competence to be holistic means that each developing ability involves the whole person. Complex competences include a behavioral component, a knowledge component, an affective or self-perception component, as well as a motivation or disposition component.

All or some of the elements of a competence can be inferred from observable demonstration of performance. Traditionally, colleges have required demonstration of only the knowledge component. When competences are defined holistically, then knowledge, skill, attitudes, self-perception and dispositioal components are specified. These components are expected to become integrated, and together with other other abilities, involve the whole person.

Competences are characterized as developmental and holistic when persons are better able to demonstrate more complex aspects and interrelationships following education and experience. As such, they are not personality characteristics or traits, but abilities that can be taught and learned. Thus, persons with more education and experience are more likely to demonstrate the competences, provided there is the opportunity to do so.

For a competence to be generic means that the developing, holistic ability will transfer across situations and settings in college and work, but also to personal and professional situations after college. Generic competences equip students with skills that transfer from one situation or organizational setting to another, and across roles and positions within a particular profession. Competences are expected to transfer. The type of setting, organizational climate and nature of the responsibilities of a particular position all influence behavioral manifestations of a competence. But an underlying competence enables a person to perform effectively in a wide variety of situations and settings. Competences acquired in college are expected to assist graduates not only in assuming a professional role, but also in their personal roles such as citizen, family member and parent.

Assessing for Competences Causally Related to Effective Performance

Our task as educators is to insure that a professional management curriculum effects competent performance by graduates in the world of work. Defining competences as causally related to effective performance implies that competence can be assessed and judged on a continuum of effectiveness in relation to criteria. Indeed, the criteria define "effectiveness."

Identifying competences that discriminate effective from ineffective performance is critical if we are to select criteria for assessment and credentialing in a competence based educational system. In such a learning process, effective performance is credentialed. Criteria or standards for credentialing are set by professionals external to the learning situation, in addition to standards derived internally from a range of student performance. Asking students to perform relative to standards set by professional expertise is usually considered more rigorous than performing relative to standards derived from a range of student performance alone.

Characteristics and principles of the assessment process for judging effective performance are described in Assessment at Alverno College (Alverno College Faculty, 1979), and represent one of the more recent directions in reconceptualizing assessment (Willingham, 1980). The Alverno assessment process is patterned after assessment center technology first developed in business and industry. And Alverno faculty have relied on volunteer assessors from the Milwaukee business and professional community to judge effective student performance since 1973. This study is another attempt to involve the professional community in credentialing graduates.

The following description of Alverno's assessment process is presented to clarify the selection of research methods used in this study. Two fundamental principles of assessment are specifying criteria and relying on multiple judgments. Faculty work to identify both specific and generic criteria for judging student performance at a particular competence level. They also recognize that any one sample of student performance is just that--a sample of what she is able to do in a given context, in response to a particular stimulus, in a particular performance mode, at a particular point in time.

Consequently, Alverno faculty rely on multiple judgments. This means observing her performance cumulatively, in a number of contexts, across a number of settings, across time, and across a variety of performance modes.

Because of the complexity of the competences being assessed, faculty design instruments complete with stimulus, performance mode and criteria that elicit to the fullest extent, her developing ability. Thus, Alverno faculty have committed themselves to designing assessment techniques that employ production tasks rather than recognition tasks. That is, the student is required to generate a response to an instrument stimulus rather than simply to recognize information. Consequently, faculty are likely to employ performance modes such as essay, group discussion, oral presentation, interview and in-basket, rather than modes such as multiple choice, short answer, true-false, etc. These performance modes enable students to demonstrate the behavior in a real rather than artificial context (e.g., to demonstrate social interaction skills, she would perform in an actual group discussion).

Use of production tasks requires expert judgment, defined as special knowledge or skill ("expertise") that he or she brings to the judging situation and applies in a rigorous or disciplined way. In the context of higher education, where we teach toward sophisticated abilities, complex cognitive structures, and highly skilled performances, we are accustomed to the use of expert judgment in instruction and assessment. Expert judgment, which involves the use of inference in abstract analytical thinking, is basic to assessing student performance at advanced levels. Expert judgment is a practical instructional and assessment tool and is in constant use by faculty in higher education who insist on production tasks to assess performance. A treatment of issues surrounding the use of expert judgment can be found in Mentkowski, Moeser and Strait (1983).

Because the assessment of generic, holistic and developmental competences involves qualitative, expert judgment, considerable attention is given to assessor training. Assessors (faculty, off-campus practicing professionals, etc.) work together 1) to understand the competence being assessed, 2) to understand the criteria for judgment, 3) to learn to identify relevant examples of student performance, 4) to apply the criteria to examples of student performance, and 5) to give feedback to students. The assessor must analyze student-generated performance, identify relevant examples of behavior and apply criteria, and then synthesize and infer a complex competence from multiple instances of behavior. Consequently, two or more assessors are often employed to independently judge performance and then come to consensus.

The faculty describe a heuristic for designing assessments that include 1) identifying components of an ability, 2) designing an instrument, 3) identifying criteria for assessment, 4) applying criteria to student performance, 5) recording a judgment, 6) giving feedback to a student on her performance (since assessment is used for diagnosis and learning prescriptions), and 7) evaluating and revising the instrument to further measure and develop understanding of the competence being assessed.

Obviously, assessment of student performance leads to evaluation and revision of instruments and clarification and

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further development of criteria for assessment. Faculty work to continually clarify and develop criteria in order to specify both specific and generic criteria for credentialing student performance. But another major source of input in identifying criteria are examples and perceptions of effective professional performance.

Identifying Perceptions of Performance Characteristics

Not only are we interested in identifying abilities from multiple sources, we also wish to tap a variety of perspectives that include the manager's perceptions as well as performance. We believe that while performance and perceptions are not always related, manager perceptions are also important. A curriculum should reflect not only competences critical to effective performance, but also performance characteristics that the professional community perceives as critical to effective management performance. We expect that perceptions and values generated from day to day management experiences may differ from the perceptions and values of an educator. Even though our faculty as a group have managerial experience, their perceptions do not cut across all organizational contexts and situation; nor are they involved in the day to day operations that generate new and unique perspectives. Further, since management is a new field for women, women's perceptions are critical to assess.

In sum, our curriculum is designed to graduate competent women professionals in management. We are interested in identifying perceptions of performance characteristics, and competences of effective women managers. We expect that our study will contribute to equalizing the opportunity of all concerned professionals to influence the education of managers.

Definition and Assessment of Competence: Job Competence Assessment

How Alverno defines, assesses and validates competence underlies the choice of the research methodology, Job Competence Assessment, employed in this study to carry out the research objectives. McBer and Company created this research methodology (Boyatzis, 1982; Klemp, 1978, 1980; Klemp & Spencer, in press; McClelland, 1978) for identifying and validating competences descriptive of effective performance from professional performance interviews and inventories. The following description of how McBer defines, assesses and validates competence points out the similarity between Alverno and McBer methods, and supports utilizing the method in our own work. A more detailed description is contained in the Method section.

The definition of competence basic to Job Competence Assessment is similar to Alverno's. Competence is also defined as developmental. Competences can be taught. Competences are holistic, that is, characteristic of persons, an interrelated set of skills, knowledge, disposition, motivation and attitudes. Competences are generic abilities that transfer across situations and contexts. Further, competences are valid when they are demonstrated to be causally related to effective performance.

> "The kernel of competence lies in effective performance by an individual. For the purpose of this report, a competency, or component or overall competence, is a characteristic of an individual that underlies effective work performance. A competency can be any human quality: It can be knowledge, a category of usable information organized around a specific content area (for example, knowledge of mathematics); it can be a skill, the ability to demonstrate a set of behaviors or processes related to a performance goal (for example, logical thinking); it can be a trait, a consistent way of responding to an equivalent set of stimuli (for example, initiative); it can be a self-schema, a person's image of self and his or her evaluation of that image (for example, self-image as a professional); or it can be a motive, a recurrent concern for a goal state or condition which drives, selects, and directs behavior of the individual (for example, the need for efficacy). A person may possess many of these characteristics, but by our definition, if the knowledge, skill, trait, self-schema, or motive is not explicity related to effective performance, it is not a competency" (Klemp & Sokol, 1980).

Job Competence Assessment is designed to identify competences that are not only related to effective performance, but that cause effective performance (Huff, 1977; Boyatzis, 1982). Competences are characteristics of persons who are effective, although McBer recognizes that "individual competence must be considered within a system, which includes the person, the job, and the work environment within which the two interact" (Klemp & Sokol, 1980, p.3). The methodology is based on the assumption that:

> ". . . the best way to identify knowledges, skills, abilities, or other characteristics of the effective performer is to identify the effective performer, study what he or she actually does on the job that distinguishes him or her from individuals whose performance is less satisfactory, and identify the knowledges, skills, abilities, or characteristics implied by these behaviors that are responsible for this difference" (Klemp & Sokol, 1980, p.3).

Competences are causally related to effective performance if they are more likely to be demonstrated by outstanding or superior performers on the job. Thus, each of the competences they define discriminates outstanding from good or average performers. A competence is considered valid if it is related to effective performance in this way.

Job Competence Assessment is based on the notion that abilities derived from management and theory and job task analysis studies rarely identify those competences or behaviors that are related to effective performance (Klemp & Sokol, 1980; Boyatzis, 1982). Nor do the studies describe which of these abilities are more important, how the several abilities are interrelated, or the combination of abilities that is critical for effective performance. While task analyses describe behaviors or skills that are required for a particular job, they do not assist the person to understand just what abilities result in acceptable or superior performance. Further, job task analyses often yield the technical skills necessary for entry level performance, but not the generic competences that function as personal abilities or characteristics that the person can call on to manage his or her own performance (e.g., "theory of action," Argyris & Schon, 1974). Further, statements of behaviors that make up performance in a profession are often not linked to the underlying ability that needs to be developed (e.g., valuing ability).

Job task analyses often do not provide examples of effective performance, set in a particular context, that instructors can use as teaching tools, and from which they can derive standards or criteria for assessment. McBer's research method recognizes the importance of setting criterion referenced rather than norm referenced standards in competence based assessment, and expects to yield examples of performance that are _behaviorally specific_ rather than vague. Thus, assessment designers have a clearer idea of what an ability or competence looks like, making an ability more open to observation, and consequently, reliable assessment. Further, behaviorally specific examples also provide the assessor with more information for developing specific feedback to a student.

Job Competence Assessment also uses similar principles of assessment in deriving competences from performance data. They rely on multiple judgments, specify criteria, and are more likely to use production type instruments. Further, assessors who code performance data from professionals are trained in the methodology. Finally, while Job Competence Assessment focuses on the _performance_ of professionals, it also uses inventories to study the perceptions of the performance characteristics managers believe are relevant to management, critical for educating and selecting managers, and descriptive of outstanding performers.

The present study is designed to describe the competences of effective women managers, and to identify how they are interrelated. We are also interested in the extent to which these competences can be described as developmental, holistic and generic. Competences are considered more developmental and holistic if related to education, experience, and level of current position, and as more generic if unrelated to type or size of the organization in which they are demonstrated.

We also plan to examine managers' perceptions of performance characteristics relevant to management, critical for education and selection, and as discriminating outstanding managers. At the same time, we will examine the relationship between performance of competences and perceptions of performance characteristics.

Women in Management

While the major focus of our study is to improve our understanding of management competences and their interrelationships, we are also committed to enhancing the careering and professional development of women management students. Examining the context in which women enter management is important if educators are to do adequate careering advising.

Faculty both initiate and reinforce careering and professionalism through coursework and advising in general education areas, and particularly in academic and professional areas of study, in this case, management. Alverno's Office of Career Development concentrates on advising and developing careering skills that assist students to examine opportunities and issues in the world of work, in relation to their own interests, competences and goals. Our efforts to advise students in careering and professional development are critical if we are to prepare students to "read" work settings, to negotiate the work world, to match abilities to realistic opportunities, and to continue learning and developing competence through experience. Thus, another important part of management curriculum is educating for careering and professional development. Faculty wish to maximize a student's chances for obtaining the kind of position and setting that supports developing her abilities, and through her, the persons and organizations she leads and serves.

Careering and Professional Development

An important asset to educators initiating persons into a profession is having models of effective professionals in the field and descriptions of their careering and abilities. Studying women managers allows us to develop a more realistic picture of careering indicators and experience of this emerging group. Describing current position and range of work experience gives some insight into the kinds of career paths women have taken. While current position level and salary increases are indicators of careering success, we are also interested in mobility within a particular organization as an indicator of breadth and depth of experience and advancement. Do women expect to be promoted? Are these women satisfied with management as a career? All of these variables can also be expected to be a function of opportunity.

Professional development takes many forms. We are interested, of course, in women managers' level of education, both related and unrelated to management, whether she has specialized in management, and if she has completed a management training program. To what extent does she engage in professional activities, and in what kinds? Generally, we expect that age, experience and education will be positively related to level of career achievement.

Opportunity for Careering

Discrimination against working women has been well documented (Riger & Galligan, 1980). Of all working women, five percent are in managerial positions; 15 percent of all working men hold such positions (Baron, 1977). A recent research report indicated that the proportion of managerial professional positions filled by women jumped from 11 percent in 1970 to 20 percent in 1979 (Dynamic Years, 1982). However, some types of organizations have traditionally employed more women, and there is a better climate and opportunity in these firms for women to advance to management positions (e.g., insurance, banking, retail). Changes in attitudes toward employing women have occurred during the last few years. The women's movement and Equal Employment Opportunity Commission (EEOC) guidelines are two contributors to attitude change in organizations and to women's career expectations. In 1965, men and women in business expected that equal access for women in management existed in only a few areas such as retail trade, in staff rather than line positions, in smaller companies and in government and educational/social service organizations. Virtually no opportunity was seen in production jobs in manufacturing (Bowman, Worthy, & Greyser, 1965). It will be interesting to compare these views with the actual distribution of women managers across organizations in this study.

But women are unlikely to secure many top jobs in management in record numbers in the near future (Salomon, 1980). Yet, many articles in the professional and popular press have concentrated on women at the top, describing their careering, characteristics, abilities, interests, their advice to other women and the circumstances of their personal lives.

In our view, studying the personal charactertistics of these unique women, whose careers are less a response to today's climate, is unlikely to give us a complete picture of the abilities it takes to succeed in management today. Further, studying the situation in which these women are currently working may not be as fruitful given the external economic environment most organizations are currently experiencing. Some persons have predicted less opportunity for women--or at least a plateauing of opportunity at the top.

Our own study has a different focus. Our major task is not to explain why women are less likely to make it to the top, or to concentrate on the unique abilities of the few that do (e.g., Hennig & Jardim, 1977). In this study, our focus is on women in middle management. Realistically, we are educating women for entry level and middle management positions, expecting that some will obtain top management positions. Middle manager is a position more attainable than top management and the probability of available openings is greater. Middle management is where we are likely to find enough women participants.

We ultimately included a small group of women executives we identified during the course of the study because one outcome of McBer's studies of job competence across a range of occupations is the finding that "the most efficient way to identify and analyze job competence is to place primary emphasis on an analysis of people in the most senior position" (Klemp, 1977, p. 4). Some critical entry level competences have been found to hinder career advancement. According to Klemp, most jobs beyond entry level require work management, cooperation with others, delegation, long range planning, and interpersonal influence. Professional programs that focus exclusively on technical level skills may be preparing graduates for entry level positions, but not for promotion or higher level positions.

But do women in middle management appear to have increased opportunity for management positions? If so, we ought to be able to identify a large enough group of women across a range of organizations in order to conduct our study. One indicator of increased opportunity is finding more younger than older women in management, because younger women are more likely to have benefited from EEOC guidelines. Another indicator of increased opportunity for women in management is the extent to which women are experiencing greater socioeconomic mobility. Women managers today may be expected to have higher occupational status than their mothers.

Does opportunity differ depending on the organization? Do we indeed find more managers in some types of industries? And what are managers' perceptions of opportunity for management positions in Milwaukee? Since most of our graduates remain in this geographical area, it is particularly appropriate that we conduct a study of managers in Milwaukee.

Support for Careering

Another important factor affecting careering and professional development in management may be the degree of support available to women entering the field. One source of potential support is one's colleagues, another is one's family.

We intend to study effective women managers. These women are more likely part of a network of managers, because they are selected by a member of the business community external to their own organization (cf. Method). We are likely, therefore, to be involving women who have made it in management. Since they are part of a network of some kind, we are also less likely to be involving women who are isolated "tokens," pressured by the demands of a hostile environment with little or no means of support.

Middle managers, at least the younger group, are more likely to have benefited from the women's movement, and to have established a network of other women managers who can serve as colleagues or even mentors. They are also less likely to be "token" women. Kanter (1977) suggests that an important factor for women making it in management may be the presence of other managers against whom they are compared, which works against feminine stereotypes. Riger & Galligan (1980) point to research suggesting that minority persons are more likely to elicit stereotypic responses from others if they are the only individuals in their organizations (Taylor, Fiske, Close, Anderson, & Ruderman, 1977). We plan to compare the careering and performance of women who are employed by organizations where there are more women managers in the organization. We expect that those organizations have more potential sources of support than those with none, one, or two managers.

What kind of support exists for women breaking into a nontraditional field? Do they experience support in their personal lives for taking on this new role?

Villadsen (1980) found that husband's support was an important factor in women administrators' ability to integrate career and family. We reasoned that husbands who have a similar or higher level of occupational status will be more likely to provide support because they can better empathize with career demands. How does occupational status of married women managers compare to that of their husbands?

An important consideration for working women has to do with the extent to which they have multiple roles including wife and mother. Are women in management married? Do they have children? To what extent do these women engage in careering given that many women are wives and parents as well as career women? The wife role demands homemaking, and the mother role, childrearing. Consequently, there may be role conflict. Multiple roles might be expected to impede ability to devote adequate time to careering and professional development. Home and family responsibilities could be seen as barriers to effective socialization at work (Jerdee & Rosen, 1976) and performance on the job (Hall, 1972), particularly in a profession which traditionally has not accomodated itself to women and their multiple responsibilities. Even though women do not have children, there are potential conflicts in dual career families, such that single women without children may have more time to devote to careering, should they choose to do so. We are not implying that the kinds of problems that arise cannot be resolved, but rather that there is not a great deal of experience or expertise to draw on in either professional or popular literature to assist either men or women to cope with dual career conflicts or with conflicting work and family obligations.

Socialization for Careering

Several studies of women in management have researched socialization factors that lead to careering and professional development. While we are not focusing on this issue in the present study, we will examine the relationship between some common background factors (e.g., year of birth, whether the mother worked outside the home, mother's and father's occupation, and birth order) on careering and professional development variables. Finally, we are interested in the interrelationships among opportunity, support and socialization variables in relation to careering and professional development.

Relating Careering and Professional Development to Effective Managerial Performance

A major issue for individuals in management is the extent to which careering and professional development factors are related to effective managerial performance. Clearly, acquisition of competences during professional education does not guarantee that the person will be able to demonstrate them. Terborg (1977) comments that research limited to correlations between self-report predictors and self-report criteria should be discouraged and that more attention must be focused on measurement of behaviors. We agree. Therefore, attention in this study is focused on how self-report careering, and professional development is related to competence. We are interested in how effective performance is related to variables traditionally thought to affect competent performance, like age, education and experience.

We are also concerned with the degree to which competences are developmental,, holistic and generic. In our study of competences of effective women managers, we examine the relationship between education, breadth and depth of experience or advancement, position level, and type and size of an organization on the performance of competences. These factors are studied to examine the validity of competences causally related to effective performance as developmental, holistic and generic.

Another interest lies in relating all these factors to effective performance so we can improve our efforts to advise management students. We therefore return to these relationships to re-examine them through a different lens, focusing this time on a few of the issues and problems identified above in a relatively recent wave of research on women in management (Kanter, 1977; Riger & Galligan, 1980; Terborg, 1977), attempting to better understand the relationships between opportunity and support factors and careering and professional development. Our own data, gathered primarily for purposes of studying the competences related to effective performance, can only partly illuminate these broader issues. Relationships between careering and competence must be approached with care and caution for three reasons. First, it is difficult but critical to research both person and situation variables (Riger and Galligan, 1980). Second, effective managerial performance is not necessarily tied to career advancement for male managers (Graves, 1980). Third, an adequate exploration of these issues rests on understanding a great deal more about the organizations participating than we were able to collect given the major objective of our study (see Method: Pilot Study of Procedures for Identifying and Contacting Managers and Organizations).

Riger and Galligan (1980) explored competing paradigms for researching explanations of women's lack of job advancement in management. They comment on the importance of not researching either person variables or situation variables alone, but studying personal characteristics relative to situational explanations. Riger and Galligan claim that most explanations for the lesser number of women than men holding management positions are centered in a trait or characteristic approach to the problem. They claim that emphasis on the abilities or skills that make up managerial performance on the part of women can lead to focusing on the woman and finding her wanting--whether through inadequate socialization or acquisition of feminine role characteristics. Any approach to solving the problem of the lack of women in management needs to concern itself with the interaction of both person- and situation-centered variables. One must change organizations as well as to educate women to demonstrate more sophisticated abilities and skills.

We are also responsive to the concern leveled against psychological approaches to studying traits and personal characteristics with little or no attempt to consider these characteristics in the context of the situation with which they interact and arise. As educators, we are not free to abandon the study of competences descriptive of women managers, or their performance characteristics if you will, and study organizations. Educational institutions concentrate on personal and intellectual development, and do not have opportunities to change organizations except in the sense that they develop students who become progressively more effective change agents within an institution or organization. Further, educational institutions must focus on developing those abilities or competences that transfer across situations, organizations and even careers, and that contribute to lifelong professional growth.

Yet this does not mean that a research approach carried out to identify and define competences of women in management should ignore the context of organizations or the forces that motivate, change, coerce or interact with behavior of the individual. One part of any educational curriculum is the development of competences that include considering the context, situation, and environment, and responding to such factors when selectively performing competences.

We have attempted a resolution of the need to study the person in context by defining competences as causally related to effective performance. Further, we collect performance data in such a way that a woman manager provides information on the context, what led up to her behavior as well as the result, and the actual situation in which she performed a particular competence. Thus, the competences are behaviorally and situationally grounded. By studying women managers across a wide range of organizations, we are attempting to identify competences of women managers that reflect a wide range of settings, and that float to the top despite the constraints or demands of the position or work environment.

Graves' (1980) research indicates that career success (measured by salary increases) is not necessarily tied to effectiveness (measured by evaluations of performance by superiors and colleagues). Abilities that may result in promotion may not necessarily be those that are related to effective performance in one's position. Graves found that a number of skills important to climbing the career ladder were negatively related to effective performance in the managerial role. For example, individual, unilateral action by managers toward short term goals in their own work unit, verbal and reasoning abilities, and a controlled public image not given to emotion or excitability were positively related to success (percent salary increase) and negatively related to effectiveness (performance evaluations). In contrast, effective management behaviors such as delegation, team building, goal setting, honesty with subordinates, and keeping them informed on job-related matters are positively related to effectiveness and negatively related to success. Graves points out that organizations should reward abilities that lead to effectiveness as well as those that lead to success.

The extent to which success is predicted by effectiveness is related to opportunity. To what extent will women who expect to be promoted because of their effectiveness actually receive the monetary and status rewards of the business world? Is education, experience, and position related to effectiveness? Is the opportunity for networking with other women managers in the organization related to women's effectiveness? Does fulfilling the multiple roles of careering, wife and parenting impede women's ability to perform? These are some of the questions we plan to investigate.

How do Women Managers' Competences Compare to Those of Men?

We do not wish to create the impression that we believe there are such wide differences in the way women manage that a competence model will be particularly different from one described by male managers. Rather, we are interested in creating a model of managerial performance that is inclusive of the wide variety of strategies used in management. Any change in composition of any professional group argues for the new group's inclusion, and is particularly important for us since we educate women.

Riger and Galligan do suggest that women make "unique contributions (to management) that can be obtained from more traditionally feminine orientations" (1980, p. 908). They point out that traditionally masculine work styles are not necessarily productive for the person or for the organization.

We believe that any profession may be enhanced by educating for the unique abilities that are more characteristic of feminine role socialization and that may ease the debilitating effects of a single-minded, "get ahead" orientation which may negatively affect the professional's physical and mental health (Pleck, 1976; Pleck & Brannon, 1978), or the organizations' ability to develop subordinates (Graves, 1980). Whether the abilities related specifically to effective performance in management differ for men and women is open to question. Predictors such as biographical data and assessment center ratings, which have been validated on men, also predict managerial performance for women (Moses & Boehm, 1975).

While the purpose of the present study is not to describe the unique abilities that women may contribute to management given their traditionally feminine socialization, we do intend at a later time to compare results from this study to male manager performance in other studies (Boyatzis, 1982) in order to examine this issue.

Summary of Research and Curriculum Development Goals

The present study has the following research goals.

(1) Develop a competence model for effective managerial performance

- Describe the competences of effective managers and their interrelationships
- Describe the extent to which the competences are developmental, holistic and generic

(2) Identify managers' perceptions of performance characteristics relevant to management, critical for education and selection, and descriptive of outstanding managers

- Compare perceptions to performance of competences
- Integrate perceptions into the competence model for effective managerial performance

(3) Describe the careering and professional development of women in management today

- Examine if level of education and experience affect careering
- Examine if opportunity, support and early socialization factors affect careering and professional development

(4) Examine if women in different types of organizations, and careering and professional development perform a a wider range of competences

These research goals are seen as contributing to the following curriculum development goals.

(1) Develop a competence model of effective managerial performance representative of women's abilities that can serve to validate, and consequently improve, competences taught toward in management curricula

(2) Create a pool of behavioral examples set within particular contexts that can serve as instructional tools, assessment criteria and feedback for management students

(3) Advise women students in careering and professional development and how such development relates to effective performance in the managerial role

By using a methodology that yields competences causally related to effective performance, we are enhancing the probability that competences students demonstrate in college can be developed through education and experience, transfer across work environments, and contribute to lifelong professional development. At the same time, by using a methodology that focuses on perceptions of performance characteristics, as well as performance of competences, we increase the perspectives tapped and further enlighten our understanding. By focusing on women managers as participants, we are broadening the opportunity for women students to receive adequate career advising and for women professionals to influence the education and work opportunities of their future colleagues.

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METHOD

Pilot Study of Procedures for Identifying and Contacting Managers and Organizations

In designing our study, we recognized that we were involving a group of persons who are relatively rare in organizations. Indeed, an important first objective for the study is to generate information about women managers as a whole. One contribution our study makes to the profession is to better describe the general characteristics of this emerging professional group.

While we had selected a tested methodology in the field of management, we also recognized that we needed to make some adjustments in the method in view of the special conditions under which we were conducting the research. Job Competence Assessment is generally used by researchers at McBer and Company who are invited consultants to a single company where a group of managers can be more easily targeted and involved in the study as part of expected job responsibilities. The company receives, as an immediate benefit, a competence model that is organization specific. In contrast, we are expecting to involve a wide range of companies and a group of managers difficult to identify and select, which makes it impossible to use that aspect of Job Competence Assessment for discriminating outstanding and good manager groups.

Further, the organizations and managers participating could expect only a long range benefit of improving entry level professional qualifications of management graduates. Managers who participated would be contributing their time outside expected job responsibilities.

Following specification of the original design for the study of women managers, the Management Research Team conducted a pilot study to respond to several issues:

- What level of management should we study (entry level, middle, top), in what types of organizations (profit-making, size, etc.)?
- How do we identify a sample of women managers given the paucity of women in management?
- How do we identify a sample of organizations?
- How do we distinguish "outstanding" women managers from "good" women managers so we can validate competences related to effective performance?
- What procedures will be most effective in enlisting the cooperation of organizations and managers to be involved in the study?

Given these practical methodological and political issues, it became clear to us early on that careful attention to developing sampling, selection and contacting procedures would be critical if the study were to be successful. To respond to these issues we need to:

- Select criteria for including managers and organization,
- Estimate the probability of being able to identify a large enough sample of women managers, given that we would need to equalize criteria for selection of managers and organizations,
- Create methods for identifying outstanding managers and organizations, and
- Identify factors affecting the likelihood managers and organizations would cooperate and create procedures sensitive to these factors.

Therefore, the Management Research Team conducted pilot studies of managers and companies, tapped several sources of expert judgment at the college and in the business community, and pretested procedures in two companies before arriving at the final study procedure, and beginning data collection. The following section describes the rationale and results of this process. We believe the outcome of this initial phase of the management study, which lasted 18 months, accounted for our success in conducting the study and yielded the kind of information critical for conducting studies of women in management other than this study.

How Do We Identify Women Managers and Organizations?

Clearly, most studies of women managers are faced with difficulties in identifying the sample, and in obtaining a large enough group to participate. In Job Competence Assessment, a competence model is usually developed through interviewing persons in the same organization. We planned to interview individuals across a large number of organizations to insure an adequate sample. The advantage is that a competence model may be validated across a wide range of organizations, provided we can specify criteria for identifying a sample of organizations.

Another issue in identifying a sample of women managers across a wide range of companies, is creating a set of criteria for identifying "manager" independent of any organization's criteria for manager selection. For example, an organization may identify its managers for us, but the criteria for calling a woman a manager may differ across organizations. Criteria for "manager" enables us to screen for a sample of women managers employed by organizations with somewhat comparable organizational structures.

Criteria for Identification of Managers

Despite gains made in recent years by women in the labor force, it is still unusual to find women in managerial and executive positions (Kanter, 1977). Given the paucity of women managers at the top level of management, it seemed that we would be more likely to obtain an adequate sample at the middle level, even though we recognize that the higher the level of managers we include, the more likely we are to build an adequate competence model. We also observed that the literature and popular press had concentrated somewhat on top level executives and that we needed to study middle level managers in particular to improve management curricula. Because management at the supervisory level has a somewhat different character (i.e., more oriented exclusively to "people-management") than it does at other levels, we decided to confine the study to middle-management, recognizing that some variability would occur. By restricting the sample in this way, the study could focus on that aspect of management which represented essentially an end-point in careering terms and we would not suffer the difficulty of combining more than one distinctive type of management function. We chose the following criteria for including or excluding managers:

- Holds a position above entry level
- Is salaried
- Has at least two other persons officially reporting to her
- Has the authority to select and terminate her own staff
- Has budgetary responsibility
- Regularly has discretion over her own time
- Spends no more than 20 percent of her time performing non-managerial functions
- Is identified by her company as having primarily managerial responsibilities
- Is promotable

After discussing the criterion "Has at least two other persons officially reporting to her" with executives in the banking industry, we decided not to require a specific minimum number of persons reporting to the person interviewed. The executives explained that many truly middle management positions in service oriented companies did not involve extensive reporting relationships, even at the vice-president level. Therefore, the criterion was relaxed for service industry positions.

Consequently, a member of the research team from the Management Department undertook a pilot study (Birney, 1978). A comprehensive literature review and discussion with several U.S. offices (e.g. EEOC, Department of Commerce, Labor, etc.) found no related study to provide us with information on where women managers were employed in Milwaukee. (Equal Employment Opportunity Commission (EEOC) reports are confidential.)

Six representative firms were then surveyed to identify how many women managers were employed given our criteria. In the organizations surveyed, women were employed in important executive and managerial positions but in small numbers (e.g. one service company employing over 10,000 had 18 women who might meet the criteria; the others ranged from two to 12). We concluded that we could expect to contact 30 firms to obtain a sample of 80 women managers.

Criteria for Selection of Companies

A second step was to develop criteria for selecting organizations. The preliminary survey of six companies believed to have opportunities for women found that the number of women managers varied from two to 18. Therefore, we planned to choose several companies to meet our sample size requirements. We also chose to limit the study to private, profit making corporations within the Milwaukee area. By restricting the study to the private sector, we hoped to eliminate such noncompetence factors in careering as seniority, time in grade and political appointments. By involving profitmaking organizations, such factors as profits and cost containments can be used in measuring careering success in managerial performance and contribution toward organizational goals. By rejecting sole proprietorships and partnerships, we would decrease the likelihood of including managers who are in their positions because of capital capabilities and/or nepotism. Therefore, we planned a study limited to corporations.

Although size of an organization can be measured in many ways, such as assets, sales and employees, we chose to measure companies by number of employees in that our study is behaviorally oriented and is concerned with such factors as the supervision of personnel. We could involve firms that have anywhere from one to 50,000 employees. As corporations increase in size so does their complexity, organizational hierarchy and specialization. For purposes of comparing the characteristics of managers, it is desirable to deal with organizations having reasonably close similarities in organizational structure.

For example, similarity in departmentalization would be useful in comparisons. We would want organizations which would have departmentalization in both line and staff positions such as personnel, accounting, marketing, production, engineering, finance and public relations. As women obtain managerial positions, commonality and interaction of managers working with managers in other departments is more likely to occur.

We based our measure of organizational size on number of employees because managerial responsibilities include supervision of employees. For purposes of comparing managers across several companies, we wished to deal with organizations having reasonably close similarity in organizational structure since we hoped to control for degree of departmentalization. Departmentalization is most commonly found in firms employing 300 or more persons. Therefore, we initially decided to involve only firms employing 300 or more people.

Criteria for Types of Organizations

Women are most commonly employed in such areas as retailing, insurance, banking, finance, and other service-related organizations, and we expected that these industries would be included. We initially expected to look at only a representative sample of manufacturing industries to determine whether we were assuming they had few women managers without cause. Since women are recently employed in a wider variety of types of industries, a study of managers should not necessarily be restricted to certain types. Nevertheless, in selecting a sample, we intended that the number of women interviewed from different types of industries should be representative and highly correlated to the actual distribution of women found within different types of organizations.

The geographic area was limited to the Milwaukee Standard Metropolitan Statistical area which includes the counties of Milwaukee, Waukesha, Washington and Ozaukee. Identification of firms during the pilot studies was made through the use of the Classified Directory of Wisconsin Manufacturers and a list of major employers in metropolitan Milwaukee published by the Metropolitan Milwaukee Association of Commerce (1977, 1978).

Considering all these factors, we expected to limit our study to companies meeting the following criteria:

- Private
- Profit-making
- Incorporated
- More than 300 employees
- Service-related organizations, with a subsample of manufacturing firms
- Located within the Milwaukee Standard Metropolitan Statistical area

In this initial approach, the design and procedure was predicated on the assumption that we would be sampling organizations, and then interviewing all managers in these companies. To this end, we completed a second phase of the study. We created a list of all companies meeting the above criteria--some 175 firms. Of these, about 60 were service-related. This list also served to evaluate the representativeness of the organizations in our final sample.

We proposed to randomly select five companies from the manufacturing group to identify women meeting our managerial criteria. From the service-related group, we proposed contacting the companies where we already knew that a relatively large number of women held managerial positions. After exhausting this known sample, we initially planned to randomly select other companies until we reached our planned sample size.

How do we Identify Outstanding Women Managers?

Job Competence Assessment calls for identifying "outstanding" and "good" professionals prior to interviewing through a peer nomination procedure (Kane & Lawler, 1978; Klemp & Sokol, 1980; Mentkowski, DeBack, Bishop, Allen & Blanton, 1980).

Since we could not reasonably incorporate a peer nomination procedure, as we did in our study of professional nurses (Mentkowski, et al., 1980) to determine which managers are "outstanding" and "good," we initially planned to use multiple indicators to make this judgment. Specifically, we planned to ask questions after the interview on current position, experience, percent of salary increase, and expectation of promotion. This information, along with judgments by a panel of experts who would evaluate the performance interview on quality of job performance, could be used to determine "outstanding" vs. "good" managers. We rejected using quantitative and qualitative performance measures used by the companies themselves, since criteria used across organizations would not be comparable.

Consequently, we devised but later rejected using a one page, five item questionnaire to be given to the manager's supervisor, with her permission. The questionnaire asked the manager to respond to the following questions on a six point scale:

- Will this person be promoted?
- How effective is she at this position compared to the most effective person you have known?
- How would you rate her overall performance?
- Thinking of objective criteria used by this company to judge department output, how productive is she?
- Would you rehire her at this position?

What Procedures Will be Most Effective in Enlisting the Cooperation of Organizations and Managers?

Our initial contacts with six organizations led us to expect cooperation provided we followed organizational protocol for contacting both the organization and its managers. This was particularly important since identifying women managers within companies would be politically sensitive. Given the emphasis on affirmative action, the number of women managers a company does or does not have is of concern. Most organizations are very sensitive to releasing any information relative to the Equal Employment Opportunity Act. This is especially true if a company is just beginning to develop an affirmative action program and is delivering services or goods under federal contract. Involvement in the study could also have a potential impact on the woman herself. Being identified, or not identified, when she is already under some pressure to perform, and is probably already singled out because she is in a male-dominated profession, could affect her willingness to participate. We also were sensitive to the competitive nature of the business world, and devised confidentiality procedures for protecting the organization's and manager's identity. These issues underscored our plan to study the competences of managers and not the organization itself. Our major reason for the study was to improve educational practice.

Consequently, once we had created a list of organizations, we devised a procedure for contacting that included a plan to involve "friends" of Alverno within and outside the companies who would either initiate contact with the company or support our request. They could also provide information on a particular organization's protocol that would be helpful in making a contact. We simultaneously identified persons in the community related to, or working with the college, that could be "contact" persons. These included the Board of Trustees, whose membership is comprised of many top executives in the Milwaukee business community, Alverno assessors, other contributors to the college, etc. We created this list in cooperation with Alverno's President, the Development Office, Off-Campus Experiential Learning staff, and other college personnel who dealt with corporations. For each of the 175 firms, we identified "contact" persons, and expected them to "pave the way" for an organization's participation.

The following procedures were proposed. The President of Alverno College would send a letter introducing the study to the President of the organization and to all personnel in the organization who had some relationship to the college. After one week, our President would make a follow-up phone call to the company president to enlist cooperation, insure confidentiality, assure the firm that the project had the full support of the college, offer a copy of the final report, and request a project liaison. An Office of Research and Evaluation researcher would then make a personal appointment with the company's project liaison, explain the project rationale and methodology, and request aid in identifying women managers who met the criteria for "manager." Women managers identified would then be individually contacted according to a procedure worked out with the liaison. She would then be scheduled for an interview. Afterwards, we proposed requesting her permission to have her supervisor rate her performance. A letter of thanks to the manager would follow completion of her participation.

Results from Pretesting Procedures with Expert Judges and Test Companies

Following development of sample letters, proposed contact procedures and instruments, we pretested them with two organizations and their managers. Both pretests were carried out with manufacturing firms. We requested feedback from pretest participants about all aspects of the procedure. Both executives and managers were asked to provide input about the study, including criteria for judging women in management.

The management research team also met with Alverno's Board of Trustees. The Trustees reviewed and critiqued a description of the study proposal which outlined its purposes, design and procedures. Several issues were discussed, including how to approach a company to ask for their participation, what criteria to use to distinguish between outstanding and good women managers and in what form participating companies should receive feedback. The expertise of the Board of Trustees, which includes business executives and an attorney, provided helpful input, and the Trustees were very supportive of the management study. The Trustees concurred that the system of relying on Alverno contacts to "pave the way" was unnecessary because business executives are very willing to support educational efforts. They concluded that a letter from Alverno's President was sufficient for contacting companies, but pointed out that asking an organization to identify women managers would be sensitive irrespective of the procedure used.

It was strongly suggested by these advisors from business and industry that asking for a supervisor's evaluation of a manager selected would be likely to jeapordize the cooperativeness we received and the rapport we established with the manager. Also, release of such information to anyone outside the organization was a legally questionable procedure despite our assurances of confidentiality. They pointed out that we were more interested in the manager giving us descriptions of what she did on-the-job, without fear of evaluation, than we were on whether she was "outstanding" or "good," and her actual promotability or success within the company.

Our tryout of procedures with two companies confirmed that organizations, though very cooperative and supportive of the study, were sensitive to making public the number of women managers they employed. Further, identifying the most qualified person to evaluate the manager was difficult to do, and it was also sensitive. We therefore planned to use self-report as the mode for identifying information relative to careering and professional development from which levels of effectiveness could be inferred.

Revision of Procedures and Their Effectiveness

The elaborate procedures for contact companies and then identifying managers proved cumbersome to carry out and were too politically sensitive. Apparently, we would need to rely on self-report for managers' careering information. Our procedures for involving companies proved to have an important drawback. Executives must first be asked if any women managers are currently on staff. This question is potentially embarrassing or threatening to some companies. This method was therefore altered to sample managers, rather than firms. This made it possible to approach an organization with a list of persons whom we already knew were managers and ask permission to interview them. In addition, it provided us with a positive and nonthreatening way to ask executives to identify other women managers in the company whom we might also interview. Finally, it allowed the sampling process itself to be "open-ended," in that interviewees could be added through identification by either the companies or by the managers we interviewed. This procedure would still allow us to restrict companies involved to those meeting our original criteria (private, profit-making, and employing 300 or more people).

While the revised procedure makes random sampling impossible, the problem of entry to organizations as well as that of locating members of a relatively "rare" sample are alleviated. Our procedure is a modified version of "snowball sampling" (Goodman, 1961), which was designed for the study of limited-membership categories, such as political elites. Sampling proceeds from an initial basis of multiple identifications of the same individuals. We planned to stop when the sample size reached 80.

The process of beginning the sampling procedure involved asking members of Alverno's Management Department Advisory Council, a group of local area executives, to provide the names of women in middle management that might be interviewed. They had already participated in helping the Management Research Team generate the Management Performance Characteristic Inventory for the study. An additional set of considerations came from a meeting held between the Management Research Team and the Management Department's Management Department's Management Advisory Council. Several members of the Council also suggested that since there were few women in management positions, contacting companies for permission to interview women managers might prove embarrassing for some who did not have any. Many members suggested that they could provide names of effective women in management and we could begin with this initial, select list. In this way, it was suggested, we could also better avoid interviewing persons who had the title of manager but were in fact in supervisory or other non-management positions.

Taking this input into account, an alternative procedure was developed that would minimize the possibility of embarrassing companies and at the same time maximize the likelihood of including many of, if not most of, the women in middle and top level management positions in the local area. In addition, criteria for inclusion of both companies and managers in the study were also revised.

The Management Department Advisory Council was very cooperative, and some members asked other executives to generate names for us. We also gained the cooperation of a local women's professional organization as well as that of the president of a similar group with national affiliation. This procedure quickly generated a list of 135 different names. Additional names ($\underline{n}$ = 21) were also generated by the managers we interviewed. This allowed us to select from a range of types of industries in selecting managers to interview, and to insure representativeness of the types of organizations selected. Seventy-five percent of these managers met our criteria for defining a manager.

We discovered that there was a network of women managers in Milwaukee who could be tapped to identify their outstanding members. Further, this procedure provided us with an excellent criterion for "outstanding," since the fact that a woman is known outside her own department and nominated is one indicator of "outstanding," particularly in middle management.

In sum, we were extremely successful in completing the interviewing for the management study. We identified 146 possible participants and interviewed 103 women managers and executives in the Milwaukee area in some 53 firms and organizations (our projected sample size was 80 managers in 30 companies).

No specific size criterion was used to determine which companies would participate, although the only locally small-scale organizations that were included were those where the manager being interviewed was the branch manager of an office for a large corporation with headquarters outside of Milwaukee. In most other cases, organizations generally fit the original proposal's criterion that the company employ 300 or more persons. In order to insure the representativeness for type of industry of our sample, we interviewed an additional 10 managers.

Although it took almost a year and a half to test out our procedures for the management study, the care with which we approached this work was critical. Of all the organizations contacted, only two did not participate. One did not give us a response, and another said they could not afford to release the persons to interview due to economic pressures. Our procedure also yielded a cadre of women executives. When our procedure identified 20 women executives (a rare but important find), we decided to interview them as well, and were able to complete interviews with 13 of that group. While we have some variability in job function, in contrast to our earlier plan, we felt we could study other kinds of questions related to careering by including executives. The following section describes the procedure used in the final study.

Final Procedures for Sampling and Contacting Managers and Organizations

Rationale and Sampling Procedure

A more technical description of the rationale for sampling follows. In the initial phase of redesigning the sampling procedure for the study, we intended to use a modified version of "snowball sampling." Snowball sampling is a procedure developed by Goodman (1961) as a means of studying community leadership structures. It has been used in various studies of leadership and influence (TenHouten, Stern & TenHouten, 1971). The original use is not particularly important in the present context, but the method has a certain appeal for the purposes of our management study. Used strictly, the procedure involves taking a random sample of firms in the local area, then taking random samples of women managers from each of the sampled firms. We could, for example, select two managers, each at random, from an initial sample of 10 sampled companies. After administering the interview and other instruments to these women, we would then ask each of them to identify two additional women managers in other local firms. The process would continue until some desired number of women in middle management is achieved.

It soon became apparent that this procedure has some of the disadvantages of our original procedures, particularly that of contacting companies "blind," without knowing whether they have women managers or not, at least in the initial random sampling stage. The logic of snowball sampling was modified so that some of its features could be retained while those that were problematic for our research design would be eliminated.

First, to avoid the problem of contacting companies without knowing whether they had women in management positions, the stricture on random sampling was eliminated. This means that the results are not as generalizable beyond this sample in the usual statistical sense. However, our purpose is less to present verifiable results in the ordinary sense than to break a path which would at least describe the characteristics of a relatively large number of women managers in a particular area. We are less interested in verification of established hypotheses, since few exist, than we are in creating a baseline for determining the competences women managers actually demonstrate in management positions. In that sense, the generalizations we derive would be of a practical rather than of a statistical or theoretical nature, and may be used to develop later studies.

Traditional sampling based on random selection is not feasible due to the small numbers of women in management positions, and sampling from a small number of companies with a heavy concentration of women managers would have restricted the scope of the study to only a few types of business concerns. Thus, since the goal was to suggest a general model of managerial competence, traditional techniques were modified, and a design intended to maximize diversity of firms and organizations was developed.

Sample

As described in the pilot study, we began the sampling process by asking the Management Advisory Council to identify effective women in middle management for an initial list. On the basis of availability, cooperation, and likelihood of contact with women in managerial positions in the area, two professional women's associations (one a local group and the other with national affiliation) were approached. Members were requested to *nominate* local area management women whom they considered outstanding performers in their positions. Specifically, women who were members of these groups, including the president of the local chapter of the national group, were asked to meet with members of the Management Research Team and Alverno staff to discuss the study and to supply names of outstanding women managers. Full cooperation was provided both by the Management Advisory Council and the members of the two associations. This process yielded 125 names.

When organizations were contacted, the president or his or her representative was asked to name other effective women in middle management positions within the company. As part of the manager interview, managers were also asked to name other effective women managers in their own or in other local area companies. This process was abandoned after about half the study was completed, as no new names were added. The women named were duplications in nearly every case. At this point, enough names had been generated to complete the study with a list more than adequate to meet our original goal of 80 interviews. The fact that so many duplications were found so quickly in the process is testimony to the relatively small number of women in management in the area, to the women management network, and to the effectiveness of using expert judges to nominate local women in management from the outset.

Nevertheless, the sampling procedure approximating the "snowball" technique yielded 21 new names of women in management. Of the 146 women managers identified in the sampling process, 103 who met the criteria were interviewed. (One manager who did not meet the criteria was interviewed at the suggestion of her supervisor. She was not included in the sample.) These 103 represent all women who met the criteria for "manager" in the study, except for two managers whose companies (both in the same industry) did not grant permission for their participation in the study. Five women refused because they were too busy. Thus, 7 women were not interviewed because of their own or their company's refusal to participate. Another 36 did not meet the criteria for "manager" used in the study; 103 were interviewed.

Of the 103 women interviewed, 11 were executives (Presidents and Directors), and 92 were middle managers. The decision to include executives was made because executives had been named by our expert judges, and so we could make some comparisons of the competences identified by level and type of position.

Of the 103 women interviewed, there were 101 usable interviews. One manager declined to be interviewed with a tape recorder and also did not provide specific, codeable incidents, and one interview tape was lost. A list of managers by type of industry and position level is presented in Table 1.

Procedures for Contacting Managers and Organizations

Letters were sent to the presidents of companies from President Joel Read of Alverno explaining the rationale for the project and the confidentiality policy, and asking permission to contact specific managers identified by the Management Advisory Council, for interviews (Appendix II, A). The letters also requested identification of any other women managers in the company for the same purpose An Office of Research and Evaluation researcher followed up one week later with a phone call to the executive's office (See Appendix B). Fifty-three of the 55 organizations contacted agreed to participate. After permission was granted by the organization to contact the manager for her consent to participate, (usually after discussion with a liaison identified by the company), the interviewer called the identified managers by telephone. By this time a copy of the Alverno President's letter had been forwarded to the manager. The interviewer reviewed the criteria with her to determine her eligibility, and requested an interview if she met the criteria. If the manager did not meet the criteria, she was asked if she would complete the Management Performance Characteristics Inventory (Bishop, Mentkowski, O'Brien, Birney, Davies & McEachern, 1980; see Appendix III) and the Management Careering Questionnaire (Mentkowski & Bishop, 1980; see Appendix IV) and mail it to the interviewer. This latter procedure was instituted to ease the problem of informing an identified woman that she would not be interviewed. It proved successful in avoiding disappointments to those not included and provided additional data for a future comparison between selected and nonselected managers. Each manager who met the criteria was interviewed (Appendix V), and a copy of the Management Performance Characteristics Inventory was left with the manager to return by mail. The Management Careering Questionnaire is part of the interview itself. A thank you letter was mailed to the manager after the interview (Appendix II, B). At the conclusion of the study, each manager (Appendix II, C) received a letter of thanks and a report summary from the Director of Research and Evaluation. Alverno's President Read sent a corresponding letter (Appendix II, D) and report summary to each participating company's president. A specially written report summary was created for this purpose (Mentkowski, O'Brien, McEachern & Fowler, 1983).

Table 1

Number of Interviews by
Type of Industry and Manager's Position

Type of Company	Manager's Position	Total Number of Interviews
Insurance, Headquarters Office	Ass't. Mgr. Personnel and Development Ass't. Mgr. Marketing Services Administrative Officer, Agency Dept. Manager, Food Services Assistant Actuary Data Processing Ass't. Director of Policy Owner Services Ass't. to the President Ass't. General Counsel, Law Dept. Ass't. Mgr., Disability Insurance Affirmative Action Specialist Investment Officer, Mortgages Ass't. Actuary Senior	
Manufacturing, Machine Parts - Headquarters Office	Corporate Personnel Manager Dir. of Public Relations and Advertising Manager of Administration Director of Corporate EEO and AAP	4
Manufacturing, Small Appliances	Director, Dept. of Home Economics	1
Brewery	Brand Development Mgr., New Products Corporation Mgr., EEO	2
Insurance, Regional Office	Division Services Mgr. Regional Claims Mgr.	2
Electrical Equipment Mfr. - Division	Inside Sales Supervisor Personnel Administrator Employee Benefits Administrator Advertising Manager Manager, Order Editing Project Engineer Buyer	7

Insurance - Headquarters Office	Manager, Claims and Professional Relations Mgr., Training and Education Mgr., Cost Accounting and Budget Mgr., Compensation Mgr., Claims Control and Quality Assurance Ass't. V.P. - Rate Calculations and Statistics	6
Insurance - Home Office	Manager Mgr. of Corporate Planning Mgr. of Operating Mgr. of Data Processing Mgr. of Finance	5
Insurance - Headquarters Office	Mgr., Medical Dept. Ass't. Mgr., Basic Claims Dept. Mgr., Preferred Service Center Ass't. Mgr., Major Medical Dept. Mgr., Corporate Skills Training Mgr., UR/Peer Review	8
Savings and Loan	Vice-President, Personnel	1
Bank	Mgr., Customer Services Advertising Manager Ass't. Manager	3
Employment Services	Training Manager Mgr. of Staff Development	2
Electric Equipment Manufacturer	Personnel Manager	1
Investment Management Corporation	V.P., Portfolio Manager	1
Bank	Vice-President Data Processing	2
Temporary Employment Service	Manager	1
Utility Company	District Mgr. Dir., Manpower Development and Training Mgr. of Yellow Pages Mgr. (2)	5

Manufacturer, Sports Equipment, Machinery	Mgr. of Administrative Services Mgr. of Salary and Wage Director	2
Department Store	Division Manager Personnel Manager Promotions Director	3
Fast-Food Restaurant, Corporate Headquarters (Region)	Personnel Ass't. Mgr.	1
Electrical Systems	Brand Manager	1
Department Store	Fashion Coordinator (Corp.)	1
Auto Rental	District Sales Manager	1
Automobile Service Club	Mgr. Travel Agency	1
Insurance Company	Vice-President and Branch Manager	1
Banking and Investment Corporation	Vice-President, Investments Vice-President of Public Relations Vice-President of Public Personnel - Salary Admin.	3
Medical Equipment Manufacturer	Engineer - Manager Manager	2
Bank	Vice-President Acct. Portfolio	1
Manufacturer, Steel Products	Personnel Manager	1
Farm Equipment	Mgr. Personnel Administration Mgr. of Investor Relations	2
Optical	Executive Director	1
Health Clinic	Area Director	1
Management Consultant	President	1
Management Consulting	President	1

Grinding and Finishing of Metal Products	Vice-President	1
Electrical Sales	President	1
Public Relations	President	1
Employment Agency	President	1
Clothing Manufacturing	President	1
Food Products/ Manufacturer	President	1
Manufacturing	President	1
Department Store	Director of Mgt. Training Corporate Training Dir. Store Manager Creative Director Cosmetics Buyer	5
Utility	Home Service Supervisor	1
Steel Casting Manufacturer	Accounting Supervisor	1
Insurance - Headquarters	Financial Vice-President	1
Milling Company	Personnel Manager	1
Bank	Ass't. Vice-President Ass't. Vice-President	2
Machine Products Manufacturer	Supervisor, Design and Drafting	1
TV Station	Communications Director (Public Relations)	1
TV Station	News Director	1
Entertainment Center	Public Relations Director	1
Brewery	Brand Manager	1
Holding Company	Manager Manager, Compliance and Benefits	2

Interviewer Selection and Training

A former Division Personnel Manager with a large national insurance firm was hired as interviewer for the project. An Office of Research and Evaluation researcher trained her in McClelland's Behavioral Event Interview technique used in Job Competence Assessment. She listened to interviewer training tapes from a two day session conducted at Alverno by George Klemp of McBer and Company, one of the developers of Job Competence Assessment. The interviewer also interviewed several women in managerial positions at Alverno, including two staff members who were working on a similar study (Mentkowski et al., 1980). Further, the interviewer listened to several interview tapes from the nursing study and received feedback from the nursing study interviewer on her technique. In addition, the interviewer listened to tapes from coding sessions in our study of nursing competences and completed practice coding to understand how the results of her interviewing would be used.

A male Office of Research and Evaluation researcher, who trained the Interviewer, administered 15 interviews toward the end of the study because of time considerations.

Instruments

Behavioral Event Interview

Rationale

A major purpose of this study is to describe managerial performance of effective women managers and executives. One method for assessing performance in the work setting is having observers record behavior, or by having persons describe their own behavior in "critical incidents." Flanagan (1954) first devised this technique to allow analysis of performance in the work setting, it is now part of Job Competence Assessment (Boyatzis, 1982; Klemp, 1979; Klemp & Spencer, in press). On aspect of this method is the Behavioral Event Interview.

We selected the Behavioral Event Interview devised by McClelland (1978) and his colleagues at McBer and Company as part of Job Competence Assessment. This interview technique, while based on Flanagan's concept of critical incidents, allows the interviewer to record not only those behaviors which the manager herself believes to be critical (as opposed to having an observer record any and all behavior), but it also allows for probing the thoughts, feelings and intentions of the manager as he or she performs in situations. Since the interviews are used to derive or code generic competences, such additional information is critical. The Behavioral Event Interview also allows for additional probing so that all relevant behaviors important for performance in the situation or event can be elicited. Thus, we can reconstruct actual behaviors performed, rather than interpretations or perceptually biased recollections of past behavior (Klemp & Sokol, 1980).

In our view, the interviewee is likely to give a more specific and detailed account in an oral rendition of an event, especially with the guidance of a trained interviewer, than if he or she had to write out the information. Our experience with asking management students to create behavioral logs similar to the Behavioral Event Interview format shows that most students, even those with management experience similar to the women in our study, have difficulty with such a procedure initially, and need instruction before such incidents can be used for their own and the instructor's analysis of their behavior.

The manager is also in a position to interpret his or her behavior in light of the context in which he or she performs, giving information on why he or she behaved that way. It is difficult to judge any behavior as effective or ineffective without information as to the context in which it is performed and the outcome or result. Thus, the manager can indicate relationships of the behavior to the outcome.

It is also important to have the manager describe situations or events that he or she felt were effective as well as ineffective, and the outcome or result of the situation. Such information provides the comparison against which effective performance is judged. Further, the manager chooses to describe events which are important to him or her, giving us further information about the way in which the manager constructs the reality he or she lives with on a day to day basis.

In our opinion, however, competences derived from behavioral event interviewing do need to be tested through direct observation of behavior at some point. We concur with McBer (Boyatzis, 1982) that the ultimate validation of the competence model rests on comparison with independent performance measures.

Description

After explaining the objective of the interview, to focus on what the manager actually does in situations, the interviewer asks the interviewee to list his or her job responsibilities, along with the title and position he or she held in the organization and who reports to him or her.

Then the interviewer asks, "Can you think of an incident when you were particularly effective or not so effective," and guides the interviewee in describing the situation, what happened, and what led up to the situation. The interviewer also asks the interviewee to describe who was involved, and asks for a description of what he or she thought, felt and wanted to do in the situation. Great attention is given to describing what he or she actually did in the situation, and what the outcome of the situation was and how the manager felt about it. The interviewer attempts to collect three effective and three ineffective situations or events, all the while focusing the interviewee on his or her behavior and describing this behavior in the situation. The interviewer acts as an investigative reporter rather than giving information that would lead the interviewee to respond to certain situations, behaviors, thoughts or feelings.

Thus, the interviewer does not reflect or interpret the interviewee's behavior, or phrase questions that elicit general or hypothetical answers or let the interviewee "take charge" of the interview (Klemp, 1978).

Behavioral Event Interview Writeup

The purpose of the Behavioral Event Interview Writeup (Alverno College Office of Research and Evaluation; Appendix V) is to translate the information from an oral interview into a form for coding competences. While transcribing tapes is expensive, analyzing oral interview transcripts is difficult without some initial selection and organization of the interview material. The interviewer, who also creates the writeups, is able to organize the information into "situation," "behaviors," "thoughts" and "feelings" and "outcome" so that an assessor can code the interview more readily and systematically.

The Behavioral Event Interview Writeup in the present study will not be used at this time to derive a competence model, but rather, writeups will be coded using McBer's competence model for effective management performance. In so doing, our study provides an opportunity to validate the McBer competence model for women managers and to examine the extent to which a competence model developed from a sample of male managers primarily is adequate for describing the competences of women managers.

The writeups organize, present and insure confidentiality of the data in a form that instructors and assessment designers can use efficiently, thereby providing immediate access to the data for a number of purposes. An example of a writeup is included in Appendix VI.

McBer and Company Coding Manual for Clusters and Skill Level Competencies

During previous research on the nursing study (Mentkowski, et al., 1980), the Alverno nursing research team derived the competence model from the actual interview data against which the interview writeups were coded. The research team developed the competence model for coding the Behavioral Event Interview.

The management research team did have access to research with managers using similar methodology. This reseach was conducted with managers at several large corporations and government agencies by McBer and Company. The McBer researchers compiled competences from a variety of studies into a coding manual (Coding Manual for Clusters and Skill Level Competencies, McBer and Company, 1978). The manual was prepared for the American Management Association for use in developing a management education program (Evarts, 1982). McBer and Company made this coding manual available to Alverno for use in coding the Behavioral Event Interview Writeups. The generic competence model contained in the coding manual is a product of Boyatzis'

(1982) reanalysis of over 2000 practicing managers in a variety of different jobs and organizations completed in the last six years, which identified those skills possessed in common by superior managers. The Behavioral Event Interview was available as a data source for 253 of the 2000 managers.

Validity of the McBer Manual for the Alverno Sample

A relatively small number of women were included in McBer's series of manager competence research studies because of the limited number of women managers in these organizations and agencies. Given that this coding manual was compiled from studies of mostly male managers, how appropriate is it for use with this study of women managers? We concluded that since some women managers had been interviewed to create the manual, there was some input from women in creating the competences. Further, the Alverno interview writeups would be coded by a team of assessors representing a variety of perspectives.

Support for the assumption that the McBer Coding Manual is valid for assessing women managers' performance is that the largest competence cluster with the most subcompetences is "Interpersonal Abilities." It seemed to us that Interpersonal Abilities would be a competence cluster where men and women would differ, if there were differences. Since that cluster would be likely to show those differences, we felt that the coding manual would be representative of women managers' special abilities, if indeed such differences do exist between men and women managers. The degree to which the McBer coding manual is appropriate for coding data from women managers was put to the test during assessor training. McBer and Alverno data can also be compared.

Management Performance Characteristics Inventory

Rationale

Another purpose of this study is to ask managers to identify those characteristics of managerial performance that are relevant, critical for selection and training, and discriminate outstanding from average performers. Characteristics describing job performance may include abilities, skills, aptitudes, motivational or personal characteristics and interests.

A description of managers' perceptions can serve to validate the perceptions of management educators who also identify the abilities they think are critical when they design management programs. Practicing professionals may identify abilities critical for effective performance that may not actually be those they use. Elements thought to be most important for educational programs may stem from ideas about management behaviors that have not kept up with the demands of current practice, and vice versa. Still, this measure remains a measure of perceptions, which screens judgments of effective performance through values and attitudes. (The Behavioral Event Interview serves the purpose of measuring managerial behavior.)

The basic measurement technique for examining the question "What do managers say is important for effective management performance" involves asking a range of management professionals to generate job elements. A separate group of managers under study then judges each element (1) as relevant to one's own work experience, (2) as essential to selection and training, and (3) as characteristic of outstanding performance. Elements that meet all three criteria for judgment are then considered to be descriptive of effective management performance from the point of view of the managers surveyed.

Job task analysis methods assist in identifying the requirements of different jobs, but they do not necessarily describe the personal abilities that are related to effective performance, nor characteristics of effective performers. According to Klemp and Sokol (1980), there are several reasons why the performance characteristics approach is superior to the classical job function analysis approach, as summarized by Fine and Wiley (1971). By focusing on characteristics rather than skills, the approach more than likely identifies those abilities that are appropriate to professional school education, rather than those skills that can be learned quickly in an organization's orientation program. Performance characteristics analysis, based on Primoff's job element analysis (1977), has several advantages:

- The procedure identifies abilities, aptitudes, interests, and other personal characteristics not found in standard job function analyses

- The identification of critical characteristics is based on a comparison of superior versus average performers

- The procedure involves multiple ratings of characteristics to increase the accuracy of ratings

- There is built-in flexibility for correcting errors during development of the characteristics list

- The ratings are efficient and can be given quickly by any number of job incumbents in the field (Klemp & Sokol, 1980, pp.6-7)

In developing the inventory, it is important to select experts to generate elements who are outstanding performers and who are well acquainted with the performance of a wide range of management professionals.

Description

The Management Performance Characteristics Inventory (Appendix III) is designed to investigate managers' perceptions of the abilities, behaviors and skills (called characteristics) that contribute to effective management performance. Measuring managers' perceptions of these characteristics is a second strategy used in the study to obtain clusters of abilities to enhance our development of a competence model for effective management performance. Results from this measure can also be compared to results from the Behavioral Event Interview. The Management Performance Characteristics Inventory is an alternate and more systematic mode for measuring managers' perceptions of characteristics of effective performance that can also validate results from the "characteristics" section of the Behavioral Event Interview, although such a step will not be taken in the present study.

The inventory elicits three separate judgments about a set of performance characteristics. The first judgment is intended to separate out those characteristics that the instrument designers have selected as relevant to management performance from various sources, from those that a practicing professional group under study consider relevant to their own position and work experience. The second judgment is intended to identify those characteristics that are essential for entry to and education for the manager's position, and the third judgment is intended to identify those characteristics that discriminate outstanding performers in management.

The Management Performance Characteristics Inventory consists of 160 elements. The statements or characteristics are arranged in 32 groupings of five statements each. The instructions ask the manager to consider each of the 32 groupings of statements in turn. The manager is first asked to consider each set of 51 performance characteristics in the context of his or her own work experience. In the first judgment, the manager indicates if the characteristic is relevant to his or her experience. He or she considers those characteristics that are relevant in making the second and third judgments. In the second judgment, the manager indicates if the quality described by the characteristic is absolutely essential for selection and education of a person for a position similar to his or her own position. For the third judgment, the manager indicates if the characteristic distinguishes between outstanding and average performers in management. At the end of the inventory there is space for the manager to write five additional statements if he or she wishes, and to rate them.

An example of a set of statements follows:

- Ability to relate facts from diverse sources to yield conclusions
- Ability to make decisions under conditions of risk
- Ability to set limits for subordinates
- Concern for public image of the company or product

Development of the Management Performance Characteristics Inventory

The general strategy for generating the characteristics to be included in the Management Performance Characteristics Inventory was to tap several sources including expert judges, literature review, and recent results from studies of management performance. These sources are:

- Management Research Team
- Management Advisory Council
- Literature review (Hall, 1975; Hoffman, 1979; Kanter, 1977; Krause, 1971; Montagna, 1977; Ritzer, 1972; Slocum, 1966)
- McBer study of management competences (1978)
- Dimensions cited in recent results from management job analyses provided by Joel Moses of AT&T

The procedure for creating the Management Performance Characteristics Inventory was identified following input from several consultants with research experience in studies of management or other professions:

- George Klemp, McBer and Company
- Paul S. Pottinger and Shiela Huff, National Center for the Study of the Professions
- Joel Moses, AT&T; Donald Grant, University of Georgia; Milton Hakel, Ohio State University; members of Alverno's Evaluation Advisory Council

First, following brief individual literature reviews, each member of the Management Research Team (consisting of three Office of Research and Evaluation researchers and three management faculty) came together for a brainstorming session and generated a list of 53 characteristics. (During this brainstorming session, an Office of Research and Evaluation researcher familiar with the technique (Huff & Lard, 1978) was careful to elicit not just lists of specific behaviors, but the characteristics that underlie such behaviors.) Following brainstorming, the list was critiqued and revised for clarity, for a second draft of 56 characteristics. The Management Advisory Council then met and participated in a brainstorming session, generating an independent list of 52 characteristics. (The Council consisted of four male and two female members of the

Milwaukee business community, representing middle and top level management positions in manufacturing, insurance and banking organizations, and independent management consulting.)

Characteristics from the brainstorming sessions with the Management Research Team and the Management Advisory Council were then combined with lists of characteristics from a review of the management literature and the sociology of occupations literature (Hall, 1975; Hoffman, 1979; Kanter, 1977; Krause, 1971; Montagna, 1977; Ritzer, 1972; Slocum, 1966). Kanter's (1977) study of a large multinational firm was important to include because it focused on women as well as men in management.

Characteristics were also generated from lists of dimensions cited in three management job analyses studies provided by Joel Moses, a member of the Evaluation Advisory Council. One study was conducted by IBM of IBM managers (1600 managers rated characteristics) of three levels of management and job analyses. Another study was conducted at AT&T (Ramos, 1979) of first level management positions (1000 managers rated characteristics). A list of dimensions associated with supervisory and management success for first level supervision, middle management and top management conducted by Development Dimensions Incorporated for AT&T was also studied. McBer's management competences (1978), provided by George Klemp of McBer, were also used as a source of characteristics.

A draft of characteristics was then compiled and categorized into the following groupings and the source(s) for each characteristic was indicated per statement so characteristics could be examined for balance and duplication. This step was carried out by the Office of Research and Evaluation researcher whose expertise included the sociology of occupations.

- Management process characteristics; effective decision-making; effective analysis and problem solving; effective coordination; effective operational control; effective goal orientation

- Career process characteristics

- Personal success characteristics

- Generic characteristics: tolerance for ambiguity; effective planning; effective analysis; effective interpersonal skills; effective communication skills; self or personality traits

- Intelligence

- Possession of Relevant Technical Skills

- Managerial Experience

- Luck (being in the right place at the right time)

These characteristics were then given to the six Management Advisory Council members in a preliminary draft of the instrument. The members completed the inventory, and gave feedback on the procedure and the instrument. Their responses were reviewed as an additional check on the instrument, and a final draft was created.

The Management Research Team chose the format designed by Paul Pottinger for Huff and Webster's Job Element Inventory (1979) used with human service personnel. The reason for using this format rather than the one used in the nursing study (Mentkowski, et al., 1980) was that the nursing study format elicited some inconsistent responding (e.g., a statement might be selected as characteristic of both outstanding and marginal performers simultaneously), creating some nonsense response patterns when data were combined for each judgment. The Huff and Webster format insured that judgments of each characteristic would be separate and distinct from the other judgments.

Management Careering Questionnaire

Rationale

The study of the careering and professional development of the women managers called for the development of a Management Careering Questionnaire (Mentkowski & Bishop, 1980; Appendix IV). The sampling procedure was designed to select managers for the study who fit criteria for "manager." We recognized early on that the criteria we chose may be interpreted differently by the various persons we contacted to assist us in choosing the sample (advisors from the management and business community, executives of companies, personnel managers). Thus, we also collected data from the manager herself on her position in the company, so that we could determine variability in position among the managers interviewed.

At the same time, we expected to examine the extent to which women managers were comparable in position. To what extent are they actually "middle managers?" Data on the responsibilities they perform can be helpful in cross-checking the extent to which managers interviewed actually perform at the position described by their title in the organization.

In addition to this cross-checking of our criteria for including a manager in the study, we expected the women managers to provide us with important information related to careering and professional development, to be compared to her actual on the job performance as measured by the Behavioral Event Interview. Are women who are at higher levels of careering and professional development, compared to other women in the study, performing more of the management competences? To what extent does prior management experience and education relate to performance as measured by the interviews? The manager's careering and professional development can be expected to be related positively to her performance on the job.

While we cannot assume that the women's organizations are perfectly representative of those in the Milwaukee area, we did attempt to obtain a representative sample. Such information can assist us in examining the extent to which size and type of organization may be related to the results obtained on careering and professional development. In addition, we felt it critical that we consider these variables in light of opportunity, support and socialization variables.

Identifying "Outstanding" and "Good" Managers

Job Competence Assessment calls for identifying two groups of professionals: those selected by their peers as "outstanding" in performance, and a comparable group drawn from the same position, setting or organization who were not chosen by their peers as outstanding (we usually label this group "good"). Peer nomination is used to select the outstanding group because it is reasoned that peers are most likely to be in a position to observe the actual behavior of persons in the work setting. This method also recognizes that indicators of outstanding performance (e.g., salary increases or promotion), may not be positively correlated with measures of effectiveness on the job (Graves, 1980).

In the present study, peer nomination of outstanding managers was not possible. There were very few organizations where a large enough number of women managers were employed to allow use of the method. Instead, members of the management community were asked to identify managers who should be interviewed. A most likely assumption is that managers thus identified are outstanding, and that managers identified during the course of the study using the modified snowball sampling procedure may also be categorized as outstanding.

One solution to the problem of lack of peer nomination is to obtain independent measures of outstanding performance in management from each manager's superior, and to buttress such information with data on her performance evaluations, salary increases, time in grade, speed of promotion, etc. It is difficult to estimate the comparability of supervisory evaluations across settings, however. Even such quantitative measures such as the percent increase in salary, time in grade and speed of promotion may not be totally adequate indices of success, outstanding performance, etc., but such measures may be expected to be more comparable across organizations than supervisory evaluations.

Still another solution is to obtain quantitative indices of success and to compare them to nationally published norms in management. Local norms might also be used, but would likely reflect the representative sample of Milwaukee organizations. Nationally published norms may reflect indices of success for men, but again, it is difficult to estimate what they would actually be for women.

Early in the planning of our pilot studies, our advisors from the management and business community suggested we should not pursue obtaining supervisory judgments of manager performance because of the possible negative impact on establishing rapport with both the company and the manager to be interviewed. One alternative was to obtain self-report data from the women themselves on their careering and professional development and examine how these variables affect effective management performance variables. We would then be able to correlate such data with managerial performance as judged from the interviews.

Still another solution for obtaining data on the extent to which managers within the group interviewed demonstrate outstanding or good performance could be obtained through independent ratings of the interviews by expert judges. A future objective for the data analysis is to select a group of judges from the academic and business community to independently rate each interview on inductively generated criteria for outstanding and good management. Of course, we recognize that such rating of the interviews, when correlated with the interview coding using the management competences, represent judgments on the same data, whereas the careering data is from a different measurement mode.

In sum, one purpose of the Management Careering Questionnaire is to obtain data to examine the effects of careering and professional development variables on management performance. Other purposes include the clarification of position within the organization, as either a category or a variable, or both. We also intend to examine the influence of organization, personal roles and socialization variables on manager performance, although the measures available for the latter three categories are adequate, in our opinion, for hypothesis generation only.

Description

The Management Careering Questionnaire (MCQ) measures several variables: Careering, Professional Development, Personal Roles and Socialization. They are described in turn. We begin, however, with reference to the variable, Organization.

Organization

Because of the sensitive nature of the study, which thus focused on what the woman manager did rather than on the organization, we did not ask her questions about the company itself. Clearly, however, study results should take into account the size and type of company in which she holds such a position. A woman who holds a highly positioned management role in a small company cannot automatically be assumed to have responsibilities similar to the same position in a large organization. Size and type of organization are also important to consider in analyzing careering patterns. Again, small organizations are less likely to offer opportunities for upward mobility, and mobility may be inferred more from responsibilities assumed than from job history or position. For careering also, responsibilities seems a better indicator than title.

Careering

Position

While the women managers were selected based on criteria identified prior to the study, it was important to collect data during the interview, in addition to that collected during the telephone contact, to insure that the person interviewed actually met the criteria. Further, we were interested in obtaining as accurate a description of the variable "Position" as possible.

Several questions focused on the manager's title (title of position and department in the organization, e.g., Director of Public Relations), the title of the position she reports to, and the titles of those positions reporting officially to her. We also asked her to list the responsibilities of her position, as she saw them.

These questions were designed to clarify the nature of the position she actually held in the company. The title a person holds may be independent of the responsibilities assigned to the position. Women may be more likely assigned a title without commensurate responsibilities. Further, we were interested in identifying that part of the organizational heirarchy in which she was directly involved. To whom she reports and who reports to her is indicated partly by the title of the positions involved. Further, the number of persons reporting to her officially is yet another indicator of her role responsibilities.

Again, position titles can be misleading, and may vary from one organization to another. Consequently, a list of her actual responsibilities was important, and we were interested in having her tell us what her responsibilities were as she saw them. This would allow us a further check on what she did in the organization. The responsibilities she fulfilled assisted us in making a judgment on position, together with the other indicators of titles and number of persons reporting to the manager. Responsibilities of the job is also a variable more likely to enable comparing women from one organizational setting to another.

Experience/Advancement

Further, the Management Careering Questionnaire was also designed to collect information that would illuminate the nature of the woman's job history in the organization in which she was currently employed. She was asked to indicate the amount of time she had been in her present position (time in grade), how long she had been in the company, the previous positions she held in the company (up to five) and the amount of time she held each position. The manager's job history in the company is an indicator of promotions, from which one might infer job success. How fast she moves up the organizational ladder, and to what positions she moves, can indicate the company's view of her potential.

In addition, we asked the manager to state the last position she held prior to joining the company, and the amount of time she held that position. We were interested in determining if she had made what appeared to be a lateral, downward or upward move from her last position. Time in prior position may also be one indicator of reason for moving.

Success/Satisfaction

Another important variable relating to careering is increase in salary. In order to take a measure of "success" in the company, we asked each woman to indicate the annual percent increase in her salary, on the average, over the past three years. Percent increase over three years indicates the company's view of the woman's potential. Percent increase allows for comparison across organizations, and respects the manager's financial privacy. (If the manager had been with the company less than three years, we asked her to indicate the percent increase since starting with the company.) We also asked the manager to describe her expectations for promotion, and how satisfied she is with management as a career (very satisfied, somewhat satisfied, somewhat dissatisfied or very dissatisfied). We were interested to know her perception of how satisfied she was with management as a career, or at least what she would indicate about her level of satisfaction to the interviewer, who had said she was an important person to interview.

Clearly, this information, from which indices of careering and successful careering may be drawn, are based on self-report. Only the criteria for selection identified prior to the study were sometimes corroborated by the executive or personnel manager who gave us permission to interview the manager involved. We did not ask for either salary or job history, or the manager's evaluations from the person to whom she reported. It was strongly suggested by our advisors from business and industry that asking for such information or evaluation might jeapordize the cooperativeness we received and the rapport we established with the manager. We were more interested in her giving us descriptions of what she did on the job, without fear of evaluation, than we were on her actual promotability or success within the company. We therefore chose self-report as the mode for measuring the latter variables.

Professional Development

Education

A major interest in the present study is in the education completed by women managers. We are interested in both past and current educational efforts, and education that is both relevant and non-relevant to management as a career choice.

Thus, the Management Careering Questionnaire asked women to indicate the highest educational degree attained, the name of the school or college where the degree was received, the field in which it was achieved, and the year it was granted. The managers were asked how many years of formal education they had achieved. The women also indicated if they had ever completed a formal management training program, and if "yes," the name of the school or company where the program was completed and when.

These questions were expected to give us basic educational information, with particular emphasis on when, where, and what kind. We also asked the women to indicate if they were currently enrolled in any educational institution, and if "yes," to name the institution and the degree toward which they are working. Again, her current attempts at completing education allow us to determine the relevance of those attempts, and can serve as an indicator of her commitment to educational advancement.

Professional Activities

We think that the number and type of activities a professional engages in on her own are one indication of her commitment to her professional development. We asked for the number and type of activities she engaged in aside from company-sponsored functions that were related to her position in the company (e.g., attending professional meetings, memberships in management associations, publications, etc.).

Personal Roles and Socialization

Several questions were included in the Management Careering Questionnaire to provide information on the manager's age, parents' occupation while she was growing up, number of siblings and birth order. Each manager was asked the year in which she was born, and to state both her father's and mother's main occupation as she was growing up. We asked how many brothers and sisters she has who are older than herself, and younger, which provides information on number of siblings and birth order. These questions can be used to infer socioeconomic status, and give an indication of social mobility from youth to current age. Obviously, age is an important variable to consider in inferring success in careering.

Other questions were included to indicate marital status, husband's occupation, and number of children for whom the manager is responsible for supporting. She was asked to indicate if she is currently single, married or divorced, and if married, her husband's occupation, and the number of children or other dependents (other than her husband) for whom she has or shares responsibility for support. Current marital status, husband's occupation and number of children would allow us to examine her careering in management relative to family responsibilities and roles. Husband's occupation is a better indication of current socioeconomic status than just her own occupation, and we asked for the number of children for whom she had responsibility for support as a better indicator of current family role responsibilities than number of children alone.

In sum, the demographic information yields a variety of variables related to socioeconomic status, social mobility, parental occupational role models, birth order and number of siblings, and current family roles and responsibilities (including economic responsibilities), relative to age.

The questionnaire was designed to focus on information relating to her current job first, then her job history, and then education. Demographic information and questions about promotability, salary and satisfaction with management as a careeer were asked last because they were judged to be more sensitive.

Components of an Assessment Process for Qualitative Analysis of Effective Managerial Performance

The following section describes components of a process for qualitative analysis of effective managerial performance and for enhancing the validity of assessor judgments. Because of the commonalities previously described between the methodological approach represented by the Behavioral Event Interview and that of the Alverno faculty's principles of assessment, and because of Alverno's expertise at competence derivation (Mentkowski, et al., 1980) and qualitative data analysis (e.g., Mentkowski, Moeser & Strait, 1983), it is appropriate to use Alverno's theory of assessment (Alverno College Faculty, 1979) to guide the judging process for coding the interviews for competences and for enhancing the validity of our judgments. The judging process described below is built on the work of McBer and Company. An explicit description of McBer's methods were not available at the time of the data analysis. The description that follows is a product of collaboration between Alverno and McBer.

The following are components of a process for enhancing the validity of assessors' judgments:

- Select and train assessors to conceptualize competences to be judged and their relation to examples of professional performance

- Establish inter-rater reliability of assessor judgments and create a consensus process

- Critique and clarify the competences and study the extent to which they describe performance in the present sample

- Develop a process and rules for individual and consensus assessor judgments.

- Consult with external expert assessor

The following is a description of the judging process for individual and consensus assessor judgments:

The following is a description of the judging process for individual and consensus assessor judgments:

- Interpret behaviors and outcomes in the context of the situation
- Identify and analyze specific behavioral examples of performance in relation to outcomes
- Identify and analyze behaviors, thoughts, feelings and motivation in relation to outcomes
- Infer and relate competences/subcompetences to examples of performance
- Synthesize all information and qualitatively judge (infer) the extent to which examples relate to selected competences/subcompetences
- Identify rationale for judgment
- Record individual assessor judgment
- Reach consensus among assessors
- Record final consensus judgment

Components of a Process for Enhancing the Validity of Assessor Judgments

Select and Train Assessors to Conceptualize Competences to be Judged and Their Relation to Examples of Professional Performance

Following our decision to use McBer's coding manual as the criteria for assessment, the next step in beginning the judging process is the selection and training of assessors. First we describe assessor qualifications, and then assessor training.

Assessor Qualifications

Initially, two male and two female assessors were selected for coding the Behavioral Event Interview Writeups for competences. Two researchers from the Office of Research and Evaluation (an educational psychologist and a sociologist) who had prior experience developing a competence model for effective nursing performance (Mentkowski, et al., 1980) and two faculty from the Management Department made up the team of assessors.

All four assessors had extensive experience qualitatively judging performance. Three of the four assessors were members of Alverno's Assessment Council, the faculty group responsible for quality assurance and internal validity of assessment at Alverno. Two of the assessors had attended a two-day workshop at Alverno conducted by George Klemp of McBer on this general research procedure and the same two (an Office of Research and Evaluation researcher and a Management faculty member) had attended a session at McBer where David McClelland described and demonstrated the competence derivation process for selected Alverno faculty.

The rationale for assessor selection was to balance the team for sex, and for expertise in both research methods and the field of management, with team members having qualifications expected by their respective fields. (Researchers have the Ph.D. degree and management professors the M.B.A. or M.A. degree.) Part way into the assessor training period, the number of assessors was dropped to three, with the fourth assessor (a researcher) serving as synthesizer of questions and issues that were raised during the training sessions.

Assessor Training

Following their selection, assessors studied the concepts of "generic competence" defined by McBer and by Alverno College and the assessment process, coding rules and skills outlined in the nursing study (Mentkowski, et al., 1980). The two researchers with prior experience at competence derivation and coding guided this part of the assessor training, with the two management faculty members drawing on their experience as instructors and assessment specialists.

The competence definition used in the training is a synthesis of Alverno's and McBer's definitions, which are similar. These definitions are partly restated here to assist readers planning to learn this methodology. For Alverno, a competence is a generic ability characteristic of the person (not a set of discrete skills) that transfers across situations. It is developmental, in that it is teachable through pedagogical, cumulative levels. It can be taught toward and assessed. Competences are also holistic in that they are integrated, inseparable parts of the whole person. Competences are outcomes of an educational process, but they are also viewed as descriptions of the kind of personal abilities we are seeking to develop (Alverno College Faculty, 1979). In addition, Alverno faculty have described performance characteristics that modify or describe competent performance. For example, does the person show committed performance, does she demonstrate her performance habitually, does her performance integrate her several abilities, etc. (Alverno College Faculty, 1977).

Of Alverno's eight competences (Communications, Analysis, Problem Solving, Valuing, Social Interaction, Individual Responsibility for the Environment, Involvement in the Contemporary World, and Aesthetic Response), the Business and

Management Department develops three beyond the first four levels required of all students to two advanced levels: Problem Solving, Analysis and Social Interaction. The Department identifies these abilities as being at the heart of management practice.

McBer defines a competence as generic knowledge, skills, trait, self-schema, or motive causally related to effective and/or outstanding performance in a job (McBer and Company, 1978):

> "--It can be knowledge, a category of usable information organized around a specific content area (for example, knowledge of mathematics);
>
> --It can be a skill, an ability to demonstrate a set of behaviors or processes related to a performance goal (for example, logical thinking);
>
> --It can be a trait, a consistent way of responding to an equivalent set of stimuli (for example, initiative);
>
> --It can be a self-schema, a person's image of self and his or her evaluation of that image (for examples, self-image as a professional);
>
> or
>
> --It can be a motive, a recurrent concern for a goal state or condition which drives, selects, and directs behavior of the individual (for example, the need for efficacy)" (Klemp, 1980).

> "Causally related means that there is evidence which indicates or suggests that possession of the characteristic (e.g., skills, trait, knowledge, motive, self-schema) precedes and leads to effective and/or superior performance on-the-job. Without a theoretical prediction relating cause to effect between a characteristic and job performance, the existence of merely associational evidence alone (i.e., correlational statistical studies) does not satisfy the need for a causal relationship. Ideally, the theoretical prediction linking the characteristic and performance on the job should be supported by research evidence in which assessments of the characteristic are the measure of the independent variable and performance on the job is the measure of the dependent criterion variable" (McBer and Company, 1978).
>
> "Generic means that the competency will manifest itself in numerous specific job-related actions or behaviors. Taken together, these instances represent the evidence of the presence of competency. Competencies do not usually have a one-to-one correspondence with observable actions in

> performing a job. On the other hand, they represent the underlying characteristics that can be applied to describe the successful integration of a variety of subtasks. Competencies must have generalizability or transferability to a variety of work world requirements. For example, critical thinking may be determined to be a competency which is related to performance in a professional job. This competency may be evident in the number and types of problem-solving activities in which a person engages" (McBer and Company, 1978).

Following review of these concepts and materials, the four assessors individually studied the McBer manager competences and a small set of interview writeups. They each coded a set of situations or critical incidents and then discussed coding issues as a team. During assessor training, assessors met in a group to independently judge and then discuss one situation at a time so each would have his or her rationale in mind if a recommended code were disputed. The assessors agreed that judgments had to be justified. A code requires a rationale, but the rationale is open to discussion and therefore not limited.

The four assessors used an initial training procedure to independently underline or place in parentheses all material in a set of situations that was relevant data for coding. For example, assessors individually underlined all behavioral data, and placed all thoughts and feelings data in parentheses. While the Behavioral Event Interview Writeup format distinguished between these categories to assist the coding, relevant material may sometimes be found throughout the situation. Following underlining by individual assessors, the situations were compared. The assessors found that they were highly similar in their selection of relevant material for coding.

Establish Inter-Rater Reliability of Assessor Judgments and Create a Consensus Process

Following training to select relevant material to be coded, the assessors continued to individually judge situations, compare their coding, and reach consensus. During training, the assessors compared their coding to obtain reliability coefficients. It soon became apparent that each assessor had a different style and that each brought a different perspective to the situation. Indeed, it was the interaction of the assessors during consensus that accounted for the ultimate coding of a situation. For example, a competence different from or in addition to those identified in individual assessor coding may be assigned during consensus as a result of the discussion. Thus, the consensus sessions brought greater insight to the coding than just to compare codes in a simplistic way. The assessors observed that high inter-rater reliability was not as important a goal for individual assessor coding as was achieving the insight that was characteristic of the consensus sessions.

In sum, levels of inter-rater reliability attained by the Alverno assessors during assessor training led the research team to reject using individual assessor coding alone. For this reason, they decided the codes assigned should be the product of three individual assessor judgments. The research team was confident that the depth of the consensus discussions (one hour per interview) supported that judgments reached and codes assigned through this process were of high quality.

Critique and Clarify the Competences and Study the Extent to Which They Describe Performance in the Present Sample

While we selected the McBer coding manual for use in the present study, we were not willing to take for granted that the manual would necessarily be descriptive of women managers' abilities. Thus, we gave careful attention to the appropriateness of the manual as the coding progressed. Assessors did make careful notes of those behaviors that seemed important for our understanding of women manager competences, but that did not appear to be codable using McBer's list. Since two of the members of the management research team had participated in deriving the competences for the nursing study and coding the nursing interviews, we had a basis for comparison in judging the appropriateness of the McBer manual for the management interview data. Actually, the assessors concluded at the end of the coding that the codebook worked very well for data we had collected. Only four of the subcompetences (two in Proactivity and two in Diagnostic Use of Concepts) were unclear in the context of our data, and were argued often among the assessors. The team did not find behavior categories that seemed important to be coded that were not included in the McBer Coding Manual.

The following clarifications were made during assessor training and used in coding the writeups.

- In the competence cluster Entrepreneurial Abilities, the difference between Proactivity 1 (P initiates the action in a task sequence rather than waiting to react to the situation as it develops), and Proactivity 2 (P initiates new actions, communications, proposals, meetings, or directives to accomplish a task) are as follows. In Proactivity 1 (P initiates the action in a task sequence rather than waiting to react to the situation as it develops), the manager knows the sequence so the behavior is initiating rather than reacting. The manager initiates a single action followed by other actions we know about. For Proactivity 2 (P initiates new actions, communications, proposals, meetings, or directives to accomplish a task) she initiates new action. She is initiating actions, charting new territory.

- Diagnostic Use of Concepts can be interpreted as "I'm making something happen and here is why." Theory is linked to action by the manager verses just her interpretation of a situation. Managers do describe thinking related to behavior.

- To code Management of Groups, the manager must be in charge and it must be a formal group formed for a particular task. This category is reserved for task accomplishment of a group outside regular routine. (For example, managing a department is not running a group.)

- Specialized Knowledge is difficult to code. For example, a manager may use information in order to develop others, and so this would be coded as Development of Others. Usually, technical skills are used as a tool to perform a competence. Specialized Knowledge is also difficult to code because one must then focus on the specialized knowledge of a manager. In order to code this competence we may have to look at the specific job and function of a manager instead of data in Behavioral Event Interviews.

Develop a Process and Rules for Individual and Consensus Assessor Judgments

During these individual judging and consensus practice sessions, questions and issues continued to be raised about the appropriateness of the codes in the manual to handle the data, the role of behavioral data verses thoughts and feelings data in coding, the actual coding procedures, and so on. Throughout the training period, the fourth researcher participated in the discussion, recorded the sessions, and then developed a set of "minutes" of the sessions which set forth the issues that were discussed and their resolution. As consensus was reached on a coding issue, the assessors would develop a "rule." Such rules were compared to those used in the nursing study, recorded, and then became part of the judging process for the current study. A set of rules was thus developed to assist in the coding to show how issues had been resolved. This is particularly important since some issues tended to come up again and again. Since the coding took place over a relatively long period of time (six months), it was important that the assessors have access to the rationale and rules to insure that interview writeups were coded similarly over time.

The rationale and rules for judging present a judging process developed for Alverno's nursing study and adapted for the current study, as well as additional clarifications and rules developed during assessor training as a result of assessor discussions and in consultation with George Klemp of McBer and Company.

Consult with External Expert Assessor

If an issue was unresolved, the researcher contacted George Klemp and obtained an outside opinion. The team also consulted Klemp on other aspects of the judging process so that rules needing clarification were also influenced by the McBer research team who developed the manual. This helped to maintain the validity of its application, which is important for future comparisons of performance from the Alverno study with manager performance from other McBer studies.

Judging Process and Rules for Individual and Consensus Assessor Judgments

Following training procedures, all interviews were submitted to each of three assessors for coding. Interviews were randomly selected as to the order of coding, although interviews were deliberately mixed as to length of interview and type of job the manager performed. Variation in length and type of job insured assessor interest, and helped to reinforce the judging of generic competences that would cross situations. Coding all interviews from the same kind of job could systematically affect the judging process.

Each of three assessors received a separate copy of each interview writeup for coding. Following individual coding, each assessor gave a list of his or her codes per situation to an assistant. The assistant recorded codes for each assessor and the record was given to assessors at the beginning of the consensus session. In order to maximize the probability that an assessor would recall all of the rationale for assigning a particular code, the procedure was to individually code about six interviews (36 situations), and then meet for consensus.

The consensus session began with a comparison of the assigned codes. Assessors compared and contrasted each other's judging process. On occasion, the meaning of the subcompetence was discussed again. The three assessors would then come to consensus on the coding appropriate to each situation. Codes achieved through consensus usually consisted of more competences than one individual would select during the individual judging process. Consensus often involved "fine tuning," deciding on which category was better given the evidence. Often one individual would "see" something others would not see. The assessors observed that they had some "real arguments," that the assessors brought different perspectives to the data and that there seemed to be systematic differences in the ways individuals coded the data. These observations again reinforced the importance of the consensus process.

The assessors observed that the quality of both individual and consensus coding dropped after a time, and that three hours of consensus time was about right for "getting into" the coding and for exhausting one's energy for "holding out" for one's own perspective. After approximately 1/3 of the coding was complete, the assessors observed that they each needed thirty minutes to individually code an interview, and that the team needed one hour per interview to come to consensus. Given this amount of time and their knowledge of the judging process, the three assessors and the fourth researcher realized a change in procedure was needed if all coding was to be completed within the six months alloted. At that time, it was determined that the quality of judgement would not suffer as much if three individual judgments were brought to the consensus session. Each interview thereafter was still coded individually by each of the three assessors, but only two of the assessors participated in the consensus session with the three individual codes, to assign the final codes per situation. Assessors A and B made up one consensus team, and assessors A and C made up another consensus team. Therefore, all three perspectives were still represented in the coding. In all, the teams spent 150 hours individually coding the interviews plus an additional 100 hours of consensus time, for a total of 250 hours to code 101 interviews. Since assessor A was a member of both consensus teams, variations in coming to consensus or in coding behavior were controlled. Steps in coding are outlined below; they are written as instructions to assessors.

Interpret Behaviors and Outcomes in the Context of the Situation

Read through the entire interview first. Identify the context and meaning of the behavior in relation to the outcome in each situation. Discriminate contextual variables, and discriminate what the professional did from what other persons in the situation did.

Identify and Analyze Specific Behavioral Examples of Performance in Relation to Outcomes

Underline all behaviors, including those that are peripheral to the situation. What did the professional actually do? Focus on what occurred; do not focus on unreported behavior. Focus on behaviors related to outcomes; do not focus on the language patterns of the interviewee. Do not assume negative behaviors from lack of data.

Identify and Analyze Behaviors, Thoughts, Feelings and Motivation in Relation to Outcomes

Any statement by the professional of her thoughts and feelings in all parts of the situation write-up that ultimately might determine how the behaviors are coded should be enclosed in parentheses. All statements that may be an assist in coding may be placed in parentheses.

Consistently focus on the thoughts, feelings and wants of the professional. Thoughts and feelings are sources of information that can assist us to identify competences. Since we define competence as knowledge, disposition, motive, attitude, self-schema or perception, and skill, we must make inferences about the other aspects of competence when coding a particular behavior. The thoughts and feelings of the interviewee allow us to infer these other aspects, and so are an assist in scoring. Any one competence may involve all or some of these aspects.

When we code interviewee thinking, it is in the context of action. Information from the thoughts and feelings section is critical to understanding the professional's intention, motivation and self-schema, as well as thought processes the participant is using while acting in the situation. Thus, thoughts and feelings that occurred during the situation are codable.

It is important to code thoughts and feelings that happened during the situation, but to separate these from thoughts and feelings a participant is formulating during the interview. Separate out a professional's interpretation of a situation and his or her inferences made that are independent of the behavioral data. The participant's judgments about why certain things happened are not codable. We are interested in coding what a professional does, not his or her judgments about why certain things happened. We therefore separate his or her own constructions about the situation from constructions made by the assessors who look at the situation more objectively and holistically. Regardless of the interpretation a particular professional puts on a situation, the assessor should objectively judge based on his or her independent observations.

Infer and Relate Competences/ Subcompetences to Examples of Performance

An experienced assessor does not review every single competence or subcompetence in the manner of a checklist. Rather, the trained assessor considers competences as they come to mind and persists in finding more behavioral evidence and subcompetence "matches" until he or she is ready to synthesize the information and infer a competence/subcompetence code.

Coding is more efficient if the assessor first eliminates all competences and subcompetences that do not "fit" the situation, and then makes fine discriminations among those subcompetences that do. No situation is ever a "perfect match" to a subcompetence. Inferences need to be made. This step in assessor decision-making, identifying examples, ideas and concepts, and relating the competences judged relevant to specific behavioral examples in the interview writeup is important to the validity of qualitative judgment.

Synthesize all Information and Qualitatively Judge (Infer) the Extent to which Examples Relate to Selected Competences/Subcompetences

The task in judging is to analyze the situation for behaviors, thoughts and feelings that make up a subcompetence or competence. The skill of the assessor in coding a competence is the extent to which he or she can put together all aspects of doing, thinking, feeling and motivation to infer the competence from the combination.

One key to inferring competences is to look for a causal relationship between thoughts and feelings and the behavior or consequent action. We do not judge just on the basis of what is thought or felt because some persons may not report thoughts or feelings. We use thoughts, feelings and wants to validate inferences made from behavior. Thoughts and feelings are codable if they are followed by behavior. Thoughts and feelings are important to understand the behavior. They are clues to the extent to which inferable aspects of the competence are brought to bear in the situation, that then determine how a behavior is coded.

Effective performance is judged against the outcome of the situation cited by the professional. As we judge, we may ask "What is the relationship between knowledge and action, between motive, attitude and action, etc.?" Competences must be judged as causally related to effective outcomes from the interview writeups. The competences must be operationalizable; they must be grounded on specific behaviors mentioned in the interviews. Competences are inferred; we cannot observe a competence directly. The data base from which we infer the competence is made up of observable behavior. How do we decide which behaviors are subsumed under which competence? What are the rules for inference? We ask: "What is the result of the behavior? What is the context of the situation?" A behavior must lead to a result or outcome to be coded. We show the relationship to outcome because we are interested in effective performance. We want to know what competences lead to certain outcomes. A behavior can be either "good" or "bad." It is the context of the situation and the outcome that assists us in determining what aspect of a competence can be inferred. It is important to separate out your own values about what is effective or ineffective professional performance and base this judgment on the outcome of the situation instead.

Identify Rationale for Judgment

Giving reasons for your judgments and operating from rules for inferences you can identify is an important part of expert judgment (Mentkowski, Moeser & Strait, 1983). Such inferences can be recorded directly on the interview for reference during consensus.

Record Individual Assessor Judgment

Record judgments individually for comparison prior to consensus on the form provided. An assistant collects data from each assessor prior to consensus sessions.

Reach Consensus Among Assessors

Individual coding and consensus assists in making reliable judgments about how the situation should be coded, but consensus also increases the opportunity for seeing the complexity in a situation and the number of subcompetences that apply. Each assessor must be prepared with his or her rationale for how and on what basis an incident is coded for subcompetences, since the purpose of the consensus session is to review all coding differences, and then discuss why these codes were selected. If each assessor gives his or her rationale for why these codes were selected, a more indepth discussion of the interview writeup ensues.

When assessors do not agree absolutely on their recommended codes, they reanalyze the situation together, discussing one another's rationale, and the weighing of evidence. This situation calls for reviewing the competences and subcompetences and their application to situations that the assessors recorded individually. Assessors attempt to reach agreement on the interpretation and relevance of examples of performance, the application of the competences and subcompetences, and a code reflecting their interpretation and synthesis.

Record Final Consensus Judgment

As the judging process gets underway, the volume of records increases rapidly. All individual and consensus ratings are systematically transferred to computer files.

Rules for Assessor Judgments

The following rules are additional guides for coding:

- Each situation is coded for competence and subcompetence. While a number of different competences and subcompetences are coded per critical incident, a single situation may be coded only once for a subcompetence. The same situation can be coded for more than one competence and subcompetence.

- Behavioral statements may be coded for more than one subcompetence, because a particular behavior can be evidence for more than one competence. We infer a competence from more than one behavior, cumulatively. Therefore, behaviors may contribute to more than one competence. There may be multiple dimensions to a behavior.

- Subcompetences can sometimes be overlapping, that is, a particular behavior can be evidence for more than one competence. We do infer a competence or subcompetence from more than one behavior. Cumulatively, behaviors may thus contribute to more than one competence. If there is too much overlapping, double-coding may occur, which is cause for concern. Therefore, it is important to check across situations using the same context for similar coding of the same behavior.

- Analyze a transcript or tape of the interview in difficult cases in addition to the Behavioral Event Interview Writeup.

- Some situations are not codable because there is no behavior to code.

- "Negative" competences are not coded in this study.

- Situations are coded such that the assessor is unaware of the organization that employs the professional.

- Interviewer's perceptions are helpful in coding, and the interviews must be read holistically to a degree in order to make inferences to code competences. Situations are, however, coded individually. That is, each situation needs to "stand on it's own" in relation to the code assigned. It is important to avoid reading impressions until coding of all situations is complete. The interviewer later systematically codes the impressions.

- Some competences will not appear in the coding manual because all managers perform the behavior (e.g., decision-making).

- The coding manual does not provide for coding the content, or particular action or decision the manager made in a specific situation. For example, how and why a manager uses challenging behavior is important for coding, not that she challenged. Coding the interviews for decisions and/or actions is a topic for additional research.

RESULTS AND CONCLUSIONS

A Description of the Competences of Effective Women Managers

Competence Clusters and Competences in the McBer Coding Manual

The competence model (McBer & Company, 1978) consists of four clusters of abilities: Socio-Emotional Maturity, Entrepreneurial Abilities, Intellectual Abilities, and Inter-personal Abilities. Each of these clusters is described by several competences, and each competence is elaborated through a set of behavioral descriptors. The clusters, together with the competences, are presented below.

Socio-Emotional Maturity
- Self-Control
- Spontaneity
- Perceptual Objectivity
- Accurate Self-Assessment
- Stamina and Adaptability

Entrepreneurial Abilities
- Efficiency Orientation
- Proactivity

Intellectual Abilities
- Logical Thought
- Conceptualization
- Diagnostic Use of Concepts
- Specialized Knowledge

Interpersonal Abilities
- Development of Others
- Expressed Concern with Impact
- Use of Unilateral Power
- Use of Socialized Power
- Concern with Affiliation
- Positive Regard
- Management of Groups
- Self-Presentation
- Oral Communication

Since the cluster Specialized Knowledge has no individual competences, and because it is related to Intellectual Abilities, we included Specialized Knowledge in the Intellectual Abilities cluster for purposes of data analysis.

Coding the Interview for Competences

Each of six situations in each Behavioral Event Interview Writeup is coded separately for the competences and their corresponding subcompetences (e.g., Development of Others, (1), Demonstrates a concern for making others feel that they can accomplish an objective or goal). Each situation is coded only once for any particular competence and its corresponding subcompetence. Thus, the number of competences coded is analogous to the number of situations where the competence was demonstrated. For example, if a competence was coded in an interview four times, it was demonstrated in four of the six situations.

It is important to clarify that a Behavioral Event Interview Writeup is coded for those competences the manager demonstrated in the interview. Consequently, absence of a competence in the interview is not adequate evidence that the manager cannot demonstrate the competence. Another type of measure, or even more direct questioning or a longer interview might elicit competences not coded. Following coding of the situations, the interviewers coded the Interviewer Impressions (page 1 of the Behavioral Event Interview Writeup) for the competences Self-Presentation and Oral Communication.

Memory, Self-Presentation and Oral Communication require a judgment to be made by the interviewer regarding the interviewees' skills and abilities. This would introduce a new variable into the study, interviewer's impression, so this data is described but not included in the data analysis.

Distribution of Clusters

There are several ways to present the distribution of the competences in the sample of interviews in relation to the number of managers demonstrating them. Table 2 presents the total number of times the competences within each cluster were coded in relation to the total number of situations or critical incidents where the competences could be demonstrated. The table also presents the number and proportion of managers who demonstrated at least one competence within the cluster and the relative ranking of the clusters in each category.

It is interesting to note that the competences are evenly distributed across three competence clusters (Entrepreneurial Abilities, 436; Intellectual Abilities, 417; and Interpersonal Abilities, 431). The Socio-Emotional Maturity Cluster was coded the least (233). Three of the cluster proportions are relatively well related to the proportion of managers demonstrating them (Entrepreneurial Abilities, $\underline{p} = .95$, Intellectual Abilities, $\underline{p} = .97$, and Interpersonal Abilities, $\underline{p} = .90$). While the Socio-Emotional cluster has the fewest demonstrated competences, a relatively large proportion of the managers demonstrated it ($\underline{p} = .80$). The women managers in this study were as likely to identify and discuss situations where they demonstrated Entrepreneurial and Intellectual Abilities as they were

Table 2

Distribution of the Competence Clusters in Relation to the Proportion of Managers Performing Them

Competence Clusters	Number of times the competence was coded[1]	Proportion of competence clusters coded in relation to total number of critical incidents[2]	Relative ranking of the competence cluster based on number of times it was coded	Number of managers performing the competence cluster in the Behavioral Event Interview	Proportion of managers in relation to total number of managers[3]	Relative ranking of the competence cluster based on number of managers performing it
Socio-Emotional Maturity	233	.45	4	81	.80	4
Entrepreneurial Abilities	436	.84	1	96	.95	2
Intellectual Abilities	417	.80	3	98	.97	1
Interpersonal Abilities	431	.83	2	91	.90	3

[1] The competences were summed to obtain this number.
[2] Total number of critical incidents is 522.
[3] Total number of managers is 101.
[4] Self-Presentation and Oral Communication Skills are excluded because they were coded from Interviewer Impressions.

Interpersonal Abilities, and somewhat less likely to identify and discuss situations where they demonstrated Socio-Emotional Maturity.

One suggestion in the literature is that women managers are more likely to demonstrate Interpersonal Abilities than Entrepreneurial ones, because of expectations for women to learn nurturance and caring roles. This study shows that there were as many instances of Entrepreneurial and Intellectual Abilities as there were Interpersonal ones.

Distribution of Competences

A closer examination of the number of competences demonstrated (Table 3) and a corresponding look at which subcompetences account for the number of competences coded (Table 5) gives us a clearer idea of just which subcompetences account for the results.

Table 3 presents the total number of times each competence was coded across all the interview writeups, in relation to the number of manager interviews where the competence was demonstrated. The number of times the competence was coded is obtained by adding the number of times each subcompetence is coded across all 522 situations. A manager is judged to have demonstrated a competence if she demonstrated at least one of the subcompetences in one of the six situations she described. In Table 4, the relative ranking, from highest to lowest, of both the number of times the competence was coded and the number of managers who demonstrated it is included so their order might be more easily compared.

Table 4, a simple listing of the rank order of the competences in relation to the ranking of the managers, shows that the two rankings are very highly correlated ($\underline{r}$ = .99). We interpret this to mean that there is a broad distribution of the competences across the manager interviews. This argues for the interview as adequate in eliciting performance data across a wide range of managers. It also suggests that the number of competences that appear in the interviews is more likely to be an adequate indicator of the extent to which the managers are actually able to demonstrate the competences. We do not find instances where a large number of one of the competences is demonstrated by just a few of the managers. This also supports using the data as interval data, and studying the number of times a competence was demonstrated per interview.

The competence coded most was Proactivity ($\underline{n}$ = 311), followed by Diagnostic Use of Concepts ($\underline{n}$ = 298), and Development of Others ($\underline{n}$ = 182). Ninety-four managers demonstrated Diagnostic Use of Concepts compared to 92 for Proactivity and 70 for Development of Others. Ranked fourth, fifth and sixth were Accurate Self-Assessment ($\underline{n}$ = 125), Efficiency Orientation ($\underline{n}$ = 125) and Expressed Concern With Impact ($\underline{n}$ = 121), demonstrated by 65, 58 and 63 managers, respectively. At the other end of the continuum, Spontaneity, Specialized Knowledge and Concern with Affiliation were scored nine or less times and demonstrated by eight or fewer managers.

Table 3

Distribution of the Competences in Relation to the Proportion of Managers Performing Them

Competences	Total Number of times the competence was coded[1]	Proportion of competences in relation to total number of critical incidents[2]	Relative ranking of the competence based on number of times it was coded	Number of managers performing the competence in the Behavioral Event Interview	Proportion of managers in relation to total number of managers[3]	Relative ranking of the competence based on number of managers performing it
Socio-Emotional Maturity						
Self-Control	34	.06	(12)	27	.27	(12)
Spontaneity	9	.02	(18)	8	.08	(18)
Perceptual Objectivity	52	.10	(9)	39	.39	(10)
Accurate Self-Assessment	125	.24	(4)	65	.64	(4)
Stamina and Adaptability	13	.02	(17)	13	.13	(17)
Entrepreneurial Abilities						
Efficiency Orientation	125	.24	(5)	58	.57	(7)
Proactivity	311	.60	(1)	92	.91	(2)
Intellectual Abilities						
Logical Thought	18	.03	(16)	14	.14	(15)
Conceptualization	95	.18	(7)	59	.58	(6)
Diagnostic Use of Concepts	298	.57	(2)	94	.93	(1)
Specialized Knowledege	6	.01	(19)	5	.05	(19)
Interpersonal Abilities						
Development of Others	182	.35	(3)	70	.69	(3)
Expressed Concern with Impact	121	.23	(6)	63	.62	(5)
Use of Unilateral Power	49	.09	(11)	39	.39	(11)
Use of Socialized Power	20	.04	(15)	14	.14	(16)
Concern with Affiliation	5	.01	(20)	5	.05	(20)
Positive Regard	26	.05	(14)	23	.23	(13)
Management of Groups	28	.05	(13)	23	.23	(14)
Self Presentation[4]	72	-	(8)	42	.42	(8)
Oral Communication Skills[4]	51	-	(10)	42	.42	(9)

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[1] The subcompetences were summed to obtain this number.

[2] Total number of critical incidents is 522.

[3] Total number of managers is 101.

[4] Coded from Interviewer Impressions.

Table 4

Ranking of Competences on Number of Times Coded in Relation to Number of Managers Who Demonstrated Them

Ranking of competences based on number of times coded	Relative ranking of competences based on the number of managers who demonstrated it
Proactivity	Diagnostic Use of Concepts
Diagnostic Use of Concepts	Proactivity
Development of Others	Development of Others
Accurate Self-Assessment	Accurate Self-Assessment
Efficiency Orientation	Expressed Concern With Impact
Expressed Concern With Impact	Conceptualization
Conceptualization	Efficiency Orientation
Perceptual Objectivity	Perceptual Objectivity
Use of Unilateral Power	Use of Unilateral Power
Self-Control	Self-Control
Management of Groups	Positive Regard
Positive Regard	Management of Groups
Use of Socialized Power	Logical Thought
Logical Thought	Use of Socialized Power
Stamina and Adaptability	Stamina and Adaptability
Spontaneity	Spontaneity
Specialized Knowledge	Specialized Knowledge
Concern With Affiliation	Concern With Affiliation

Distribution of Subcompetences

As mentioned, each interview writeup was coded at the subcompetence level; each competence has two to six subcompetences which define aspects of the competence. The subcompetences have been briefly edited and are presented in Table 5 in order to describe the number of times each subcompetence was coded across all the interview writeups. The number of managers who demonstrated each subcompetence is also presented.

Some competences have a more even distribution of subcompetences coded than others, for example, Proactivity, Diagnostic Use of Concepts, Development of Others, Expressed Concern With Impact, Perceptual Objectivity and Management of Groups (see Table 5). Use of Unilateral Power and Accurate Self-Assessment, were defined primarily by one of the subcompetences. This table helps us to understand the patterns that occurred in the actual coding of the interview writeups and how a particular competence is actually demonstrated in the study sample.

Table 5

Subcompetences According to Number of Times Coded and Number of Managers Who Demonstrate Them

	Total Number of Times Competence Was Coded	Proportion of Subcomps. in Relation to Total Number of Critical Incidents	Number of Managers Demonstrating Subcomp.	Proportion of Managers in Relation to Total Number of Managers
SOCIO-EMOTIONAL MATURITY CLUSTER				
Self-Control				
1. Participant states that she held back on an impulse to say something and replaced impulsive behavior with a more appropriate response	21	.04	16	.16
2. P reports not feeling angry or upset when under explicit personal attack	2	.00	2	.02
3. P reports a personal sacrifice or denial of an impulse or need, for the good of an overriding organizational need	11	.02	11	.11
Spontaneity				
1. P acts on the basis of an immediate/emergent feeling or desire without premeditation or forethought	3	.01	3	.03
2. P overtly expresses emerging feelings to others without first thinking about impact	6	.01	5	.05
3. P makes snap decisions without first regarding the possible consequences	0	0	0	0
Perceptual Objectivity				
1. P states that each party to a conflict or disagreement has a different perspective or understanding of the issue in dispute, and P can outline those perspectives	3	.01	3	.03
2. P shows an understanding of another's point of view by describing it when it's different from her own	29	.06	26	.26
3. P communicates an understanding of the different perspectives that each party brings to a conflict, dispute, or interpersonal event	10	.02	9	.09

Table 5 continued

4. P describes taking an action for the good of the organization at the expense of another person's feeling or status, in which regret or recognition of another person's loss is mentioned	10	.02	8	.08
Accurate Self-Assessment				
1. P describes and evaluates own performance in a situation in terms that reflect a recognition of personal strengths and/or weaknesses	114	.22	64	.63
2. When describing personal weaknesses, P expresses a desire to help in developing or improving own abilities	1	.00	1	.01
3. P seeks help, or takes actions for developing or improving own specific abilities	10	.02	10	.10
Stamina and Adaptability				
1. P describes a situation in which she spent unusually long hours on a task (or tasks)	6	.01	6	.06
2. P describes self as acting patient, calm, and in control in situations of continuous high stress	1	.00	1	.01
3. P describes a prolonged task in which her continuous attention to detail throughout its course is an important element	3	.01	3	.03
4. P describes behaviors designed to reduce the effects of stress in a specific situation without noticeable deterioration in performance	2	.00	2	.02
5. P reports changing a course of action to one more appropriate based on major and stressful changes in the situation	1	.00	1	.01

Table 5 continued

ENTREPRENEURIAL ABILITIES				
Efficiency Orientation				
1. P sets specific realistic and challenging goals and/or deadlines for task accomplishment	1	.00	1	.01
2. P expresses a desire to do something better than has been done before; concern with unique achievement	24	.05	20	.20
3. P states a personal standard of excellence for task performance	6	.01	6	.06
4. P stresses efficiency in the use of time, manpower, or resources; balances task requirements and individual needs; matches people and jobs	59	.11	42	.42
5. P identifies action steps, resources, or constraints involved in reaching a goal, where the goal represents doing something better	15	.03	12	.12
6. P organizes materials or activities in a new and better way to accomplish a task	20	.04	17	.17
Proactivity (P must be the agent or initiator of actions in the situation to qualify for any of the below; the use of a generalized or collective "we" does not get scored.)				
1. P initiates the action in a task sequence rather than waiting to react to the situation as it develops	164	.31	84	.83
2. P initiates new actions, communications, proposals, meetings, or directives to accomplish a task	100	.19	59	.58
3. P exhibits resourcefulness and persistence, defined as taking two or more actions to circumvent an obstacle, rather than giving up or reconciling self to failure	27	.05	22	.22

Table 5 continued

4. P takes calculated risks and admits responsibility for success (or failure)	11	.02	9	.09
5. P describes seeking information on her own initiative, from a wide variety of sources (standard or novel)	37	.07	26	.26
INTELLECTUAL ABILITIES				
Logical Thought				
Logical Thought is coded at a level of complexity in which several logical events occur, not just one (i.e., "A leads to B" would not be scored, but "A leads to B which leads to C" would be scored).				
1. P perceives and describes cause and effect relationships in a set of events	9	.02	9	.09
2. P decides upon a course of action through rationally ordering prior events into causal sequences	3	.01	3	.03
3. P plans a series of events using some framework for sequentially ordering the events	6	.01	6	.06
Conceptualization				
1. P identifies recurrent patterns in the relationships among events, data, or phenomena and derives some meaning from that pattern	44	.08	33	.33
2. P differentiates an issue, problem, or concept into a set of constituent parts, citing a new concept as the basis for the differentiation	40	.08	30	.30
3. P interprets a set of interrelated events, ideas, or phenomena by stating an accurate and representative metaphor or analog	6	.01	5	.05

Table 5 continued

4. P explains a series of related or unrelated events in terms of a single concept different from a previous interpretation of the events	5	.01	3	.03
Diagnostic Use of Concepts				
1. P applies an existing framework or theory to interpret events	64	.12	48	.48
2. P identifies the discrepancies between the specifics of a particular case (re: person, thing, event) and the more general pattern of the typical or ideal case	33	.06	26	.26
3. P cites a general assumption or theory to interpret what she observes in a situation	165	.32	78	.77
4. P uses an explicit framework to distinguish relevant from irrelevant information in a situation	7	.01	7	.07
5. P uses ideas about political relationships among people and organizations to interpret experiences and observations	24	.05	16	.16
Specialized Knowledge				
1. P reports decisions or specific actions based upon job-specific technical knowledge	4	.01	4	.04
2. P uses technical knowledge to help her assess the situation, to help access the information needed for a job, or to influence a set of events in a situation	2	.00	2	.02
3. P reports or displays evidence of keeping up-to-date with technical advancements.	0	0	0	0
4. P can critique a written document for content, form, and style	0	0	0	0
5. P knows how to read in various languages as needed	0	0	0	0

Table 5 continued

INTERPERSONAL ABILITIES				
Self-Presentation (Usually scored from overall comment by interviewer)				
1. Interviewer (observer) reports that P has presence (i.e., is forceful, unhesitating, crisp, and impressive in nonverbal presentation of self)	27	.05	27	.27
2. P consistently expresses little ambivalence about decisions made	18	.03	18	.18
3. P consistently expresses belief that she will succeed at a task	25	.25	25	.25
Development of Others				
1. P demonstrates a concern for making others feel that they can accomplish an objective or goal	7	.01	6	.06
2. P gives other performance related feedback to be used for improving or maintaining good performance	56	.11	44	.43
3. P invites subordinates to discuss problems affecting performance	26	.05	21	.21
4. P develops subordinates or supports their self-development efforts by making available to them training opportunities, expert help, resources	44	.08	34	.34
5. P provides others with additional information, resources, or tools to help them get the job done	37	.07	29	.29
6. P helps a subordinate to accomplish a task while permitting the individual to take personal responsibility for completing the task	12	.02	12	.12

Table 5 continued

Expressed Concern With Impact				
1. P expresses a need or desire to persuade others	60	.11	43	.43
2. P expresses concern for the image or reputation of herself or the business, product, or service with which she is involved	61	.12	43	.43
Use of Unilateral Power				
1. P gives directions or orders based on personal authority, rules, and procedures to obtain compliant behavior of others	49	.09	39	.39
2. P gives directions or orders to others without soliciting input in situations where input would usually be solicited.	0	0	0	0
3. P's influence attempts are aimed at getting compliant behavior that will reflect well on her, and not necessarily benefit the other person or task accomplishment	0	0	0	0
Use of Socialized Power				
1. P builds political coalitions or potential influence networks in order to accomplish a task	7	.01	6	.06
2. P models desireable behavior as an acknowledged attempt to influence others' behavior	0	0	0	0
3. P influences others in the direction of a win-win resolution of differences	13	.02	11	.11
Oral Communication Skills				
1. Interviewer comments suggest that P speaks clearly and convincingly to others	36	.07	36	.36
2. P describes using symbolic or nonverbal cues to reinforce and/or interpret the meaning of a verbal message	0	0	0	0
3. P describes using questions or responding to questions to assure that individuals understand each other	0	0	0	0
4. P presents interviewer with exhibits or diagrams to illustrate a point P wants to make	15	.03	15	.15

Table 5 continued

Concern With Affiliation				
1. P reports spending time with specified co-workers when she had no task requirement in mind (e.g., for the sake of being friendly)	3	.01	3	.03
2. P makes friends with specified others (expressive, not instrumental behavior)	0	0	0	0
3. P expresses an interest in what specified others think, do, feel	2	.00	2	.02
Positive Regard				
1. P has faith that others are fully capable of doing good things when given the chance and illustrates with specific examples	21	.04	19	.19
2. P states a belief that people can change or improve in performance and illustrates with specific examples	5	.01	5	.05
Management of Groups (P must be in charge of or the chairperson of the group and the group must be a formal group)				
1. P communicates to others the need for cooperation or teamwork	5	.01	5	.05
2. P acts to promote cooperation with or to help another work group	5	.01	5	.05
3. P acts to create symbols of group identity, pride, trust, or team effort	8	.02	8	.08
4. P uses affiliation, amicability, or personal contact as instrumental to building commitment to a team or a task	3	.01	3	.03
5. P involves all concerned parties in resolving conflict openly	4	.01	4	.04
6. P does not take on personally what should be a group effort	3	.01	3	.03

Cluster and Competence Breadth and Depth

An important question to consider is the breadth and depth of the managers' abilities in addition to the quantity. The more competences she demonstrates across competence clusters, the broader her abilities are. To further understand the distribution of the competences, the range of competences demonstrated by the sample of women managers was examined. The total number of competences coded was 20; the number of competences demonstrated by the managers in the Behavioral Event Interview ranged from zero to twelve.

Figure 1 graphs the number of managers relative to the total number of competences they demonstrated in the Behavioral Event Interview. Fifteen managers demonstrated six competences, 14 demonstrated seven competences, and 16 demonstrated eight competences. Four or fewer managers demonstrated zero, one, two, three, eleven and twelve competences respectively. The mean and median number of competences demonstrated was seven.

The number of competences demonstrated by the managers within each cluster were graphed in a similar manner. Figure 2 presents graphs of each of the competency clusters according to the number of competences demonstrated within each cluster. For Socio-Emotional Maturity, comprised of five competences, 20 managers demonstrated zero competences; 37 managers, one competence; 23 managers, two competences; 15 managers, three competences; six managers, four competences; and zero managers, five competences. The average number of competences demonstrated in the Socio-Emotional Maturity Cluster was 1.50. For the Entrepreneurial Abilities, comprised of two competences, forty-two managers demonstrated one of the Entrepreneurial Ability competences, 54 demonstrated both, and five demonstrated neither. The average was 1.48. In the Intellectual Abilities cluster, comprised of four competences, three managers exhibited none of the competences; 34 managers, one competence; 54 managers, two competences; and 10 managers, three competences. The average was 1.70. No managers demonstrated all four of the Intellectual Abilities or all seven of the Interpersonal Abilities. In the Interpersonal Abilities cluster, comprised of nine competences (seven are coded here), 10 managers exhibited none of the competences; 18 managers exhibited one, 23 managers exhibited two, 31 managers exhibited three, 16 managers exhibited four, two managers exhibited five and one manager exhibited six of the competences. The average number of Interpersonal Abilities the women managers demonstrated was 2.35.

The graphs presented in Figure 2 provide a way to compare the shape of the distributions of competences within the clusters. The managers are fairly evenly distributed in the Entrepreneurial Abilities cluster compared to the others whereas the managers are grouped at the lower end in the Socio-Emotional Maturity cluster.

We were also interested in comparing the managers on the extent to which they demonstrated breadth in their abilities. To ascertain this, it was necessary to compare the breadth of competences demonstrated within each cluster across the four clusters of abilities to determine a cluster breadth/depth score

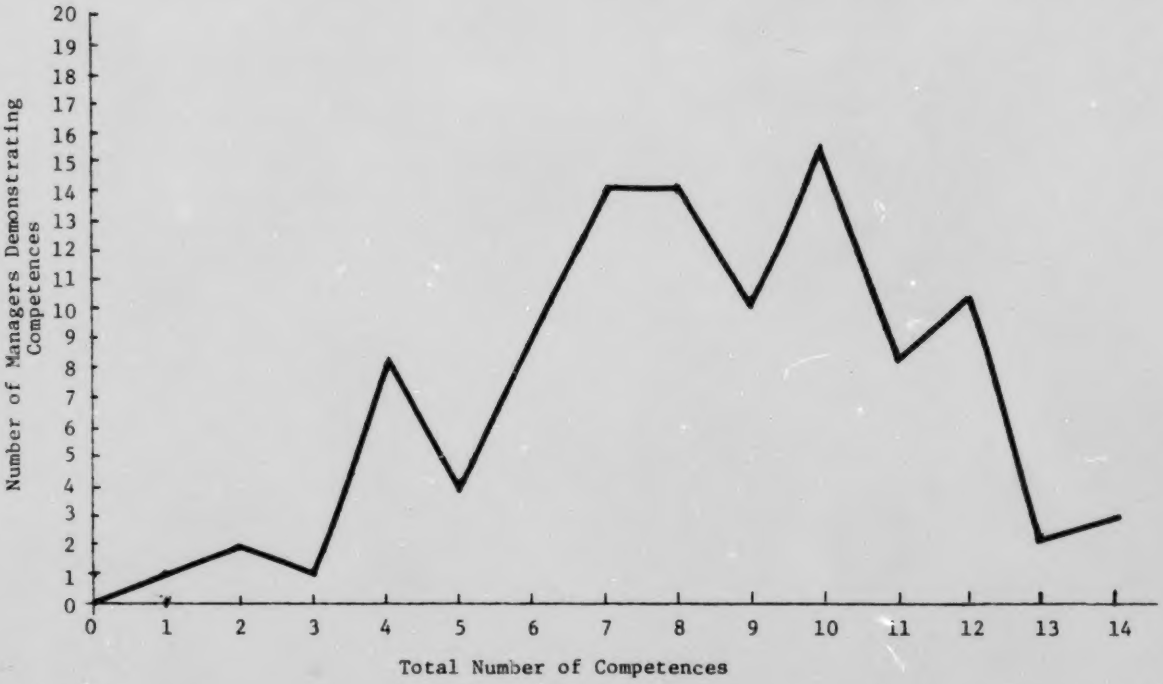


Figure 1. Number of managers relative to the number of competences they demonstrated in the Behavioral Event Interview.

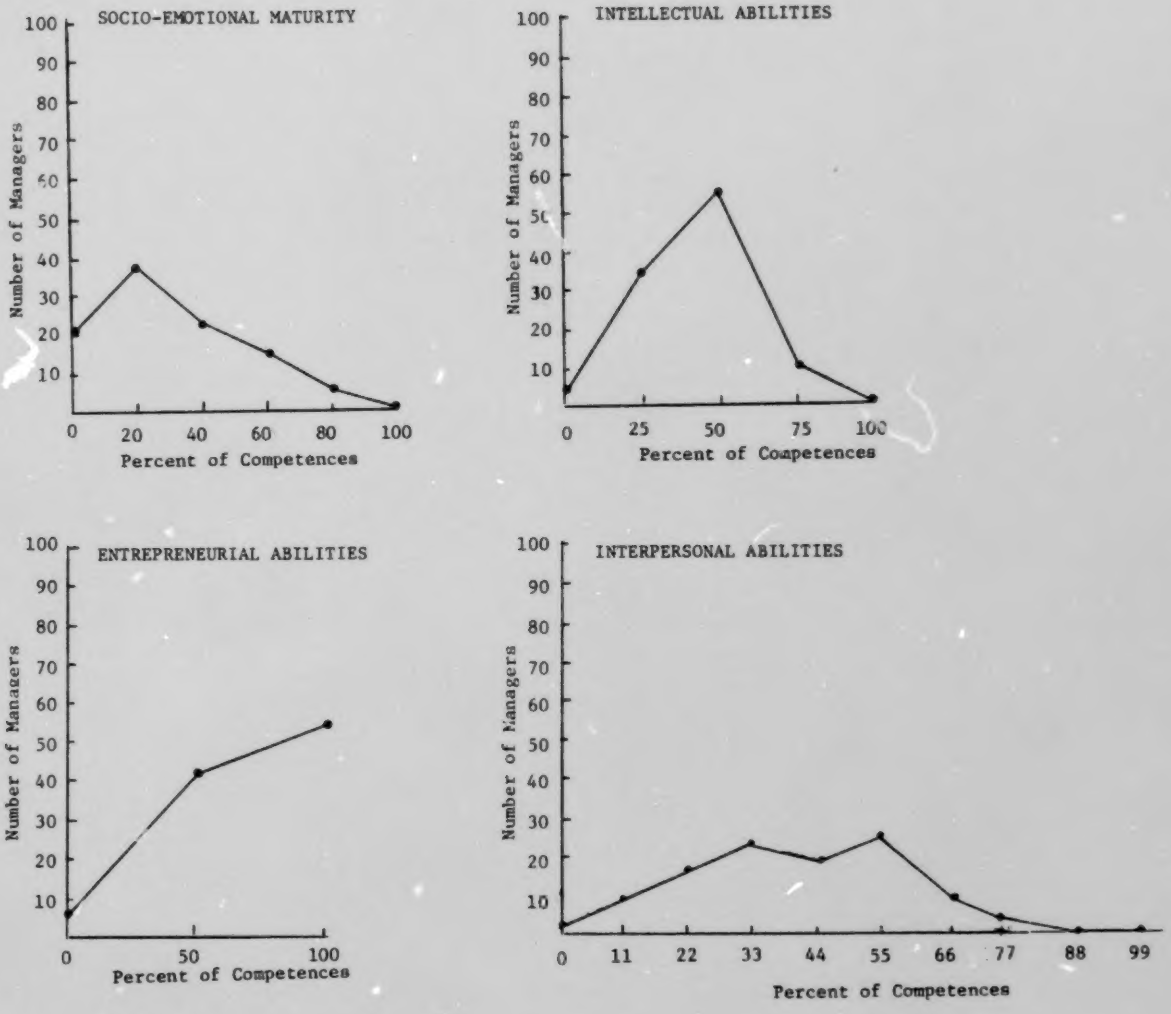


Figure 2. Number of competences demonstrated by number of managers within each competence cluster.

which could be used in the data analyses. A weighting scheme was devised to score each manager on the range of abilities within each competence cluster. The manager received a score per cluster depending upon what percentage of the competences in each cluster she demonstrated which controls for differences in the number of competences in each cluster. The percentage scores for each cluster were then summed and multiplied by 100. Higher total scores indicated greater depth within and breadth across competences. Two examples will help illustrate this procedure. One manager demonstrated two of five competences in Socio-Emotional Maturity, one of two in Entrepreneurial Abilities, two of four in Intellectual Abilities, and two of seven in Interpersonal Abilities. Her total score is 168. Another manager demonstrated two, two, three and three competences in the respective categories. Her score is 258. The range of total scores for cluster depth and breadth is zero to 292. The average is 180; the median is 184.

Table 6 presents data on the distribution of the cluster depth and breadth scores. The corresponding number of competences per manager is presented for comparison purposes. The majority of the sample (68 percent) has scores within the 128 to 238 range (four to 10 competences scored). This scoring system is a more accurate way to look at both depth and breadth within and across competence clusters. It controls for those managers who had several comptences coded in one cluster and few

Table 6

Distribution of Cluster Breadth and Depth Scores
and Corresponding Number of Competences

Cluster Breadth/Depth Scores		Percent	Corresponding Number of Competences
0 to 89	8	7.9	0 to 3
100 to 117	9	8.9	3 to 5
128 to 154	15	14.8	4 to 7
157 to 173	12	11.9	5 to 8
176 to 188	11	10.9	6 to 10
192 to 212	16	15.8	7 to 9
217 to 238	15	14.8	8 to 10
247 to 257	10	9.9	10 to 12
262 to 292	5	5.0	11 to 12

or none coded in the other clusters. For example, one manager in the 176 to 188 score range demonstrated four of the five Socio-Emotional Maturity competences, neither competence in Entrepreneurial Abilities, one of the four Intellectual Ability competences and five of the seven Interpersonal Ability competences. Although she demonstrated a total of 10 competences, she demonstrates greater depth in her abilities as opposed to breadth.

Developing a Competence Model of Effective Managerial Performance

Several analyses of relationships among the competences were carried out to build a descriptive model of effective managerial performance. Because analyses in this section are based on correlations among variables, a bivariate correlation matrix of all pairs of variables is presented first to provide a description of the one-to-one relationships among the competences and as a reference for later analyses.

Presentation of the frequency, breadth and depth of competences so far is based on the structure of the Coding Manual for Clusters and Skill Level Competences (Boyatzis, 1982; McBer, 1978). Since the sample for this study consists of women managers and executives, it is important to analyze relationships among individual competences and subcompetences independent from the categories in the coding manual. A second purpose is to examine the competences and subcompetences as they occur in the data from women managers to see if the subcompetences group differently than the grouping emerging in the Boyatzis (1982) study. In addition, we are interested in studying and analyzing relationships among the competences. A series of factor and cluster analyses were performed on the competences and subcompetences to identify and define these relationships.

A third phase in the analyses is to hypothesize causal relationships among the competence clusters and competences. The purpose of these analyses is to create and test models of competence within and across competence clusters to inform our understanding of the development of competence. This information will be a resource for curriculum designers who aim to teach and assess managerial performance. If we can describe how competences develop and interrelate, we will be better able to design a pedagogical sequence of competences.

Correlational Analyses of Competences

For all analyses, the number of times a competence were coded across the 522 situations is the unit of analysis. Table 7 presents 158 intercorrelations among all pairs of competences. Pearson product moment correlation coefficients range from -.15 to +.41. There are 38 statistically significant correlations ranging from +.17 to +.41; all are positive. About three-fourths of the possible relationships between the competences are not significant. This is general support for the independence of the competences.

Of all of the competences, Proactivity was found to be the most highly correlated to the other competences. In all, Proactivity had significant positive correlations with 10 of the 17 competences: Socio-Emotional Maturity competences Spontaneity ($\underline{r}$ = .27), Accurate Self-Assessment ($\underline{r}$ = .37), and Stamina and Adaptability ($\underline{r}$ = .20); one Entrepreneurial Ability, Efficiency Orientation ($\underline{r}$ = .40); three Intellectual Abilities, Logical Thought ($\underline{r}$ = .18), Conceptualization ($\underline{r}$ = .33), and Diagnostic Use of Concepts ($\underline{r}$ = .41); and three Interpersonal Abilities, Development of Others ($\underline{r}$ = .17), Expressed Concern with Impact ($\underline{r}$ = .24), and Use of Socialized Power ($\underline{r}$ = .24).

Three competences, Accurate Self-Assessment, Diagnostic Use of Concepts, and Development of Others, showed seven significant correlations. In addition to Proactivity, Accurate Self-Assessment was most positively correlated with Self-Control ($\underline{r}$ = .29), Diagnostic Use of Concepts ($\underline{r}$ = .26), and Management of Groups ($\underline{r}$ = .27). Diagnostic Use of Concepts was also positively correlated with Accurate Self-Assessment ($\underline{r}$ = .26), Efficiency Orientation ($\underline{r}$ = .22), and Conceptualization ($\underline{r}$ = .17), as well as three of the Interpersonal Abilities, Expressed Concern with Impact ($\underline{r}$ = .23) Use of Unilateral Power ($\underline{r}$ = .34), and Use of Socialized Power ($\underline{r}$ = .18). Development of Others was positively correlated with Positive Regard ($\underline{r}$ = .38), Management of Groups ($\underline{r}$ = .26), and Use of Unilateral Power ($\underline{r}$ = .23), all Interpersonal Abilities, and with Perceptual Objectivity ($\underline{r}$ = .17), Efficiency Orientation ($\underline{r}$ = .25), Proactivity ($\underline{r}$ = .17), and Logical Thought ($\underline{r}$ = .23).

On the other hand, some competences were significantly correlated with only a few others. Spontaneity was correlated with Accurate Self-Assessment ($\underline{r}$ = .18), Proactivity ($\underline{r}$ = .27) and Logical Thought ($\underline{r}$ = .22), whereas Perceptual Objectivity is related to Development of Others ($\underline{r}$ = .17) and use of Socialized Power ($\underline{r}$ = .17). Positive Regard has two significant relationships, Development of Others ($\underline{r}$ = .38) and Concern with Affiliation ($\underline{r}$ = .25) (which is this competence's sole significant relationship). Self-Control is significantly related to Accurate Self-Assessment only ($\underline{r}$ = .29) and Specialized Knowledge has no significant relationships.

Factor and Cluster Analyses of Competences

Factor and cluster analyses were performed on the data to determine the relationships among the competences and subcompetences. In factor analysis, correlation coefficients are used to analyze whether some underlying pattern of relationships exists such that the data may be reduced to a smaller set of factors. The method of factor analysis used was principle-component factoring with orthogonal rotation. The cluster analysis of the competences was based on the absolute value of the correlations. The cluster analysis program begins

Table 7

Correlations Among Competences

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Self-Control																	
2. Spontaneity	-.05																
3. Perceptual Objectivity	.14	.14															
4. Accurate Self-Assessment	.29**	.18*	.08														
5. Stamina and Adaptability	.07	-.01	.18	.15													
6. Efficiency Orientation	-.05	.08	.08	.14	.06												
7. Proactivity	.10	.27**	.08	.37***	.20*	.40***											
8. Logical Thought	-.04	.22*	.11	.16	.23*	.09	.18*										
9. Conceptualization	.22	.01	.02	.17*	.02	.18*	.33***	.11									
10. Diagnostic Use of Concepts	.05	.00	-.06	.26**	.02	.22*	.41***	-.12	.17*								
11. Specialized Knowledge	.12	-.06	.00	.02	.02	.08	.00	-.08	-.11	.09							
12. Development of Others	.02	.05	.17*	.12	-.01	.25**	.17*	.23**	.07	.09	-.02						
13. Concern with Impact	.03	.05	.03	.21*	.17*	-.01	.24*	.07	.06	.23*	.14	.15					
14. Use of Unilateral Power	-.01	-.02	.09	.15	-.01	-.06	.14	-.05	.06	.34***	.11	.23*	.04				
15. Use of Socialized Power	.07	.07	.17*	.00	.35***	.10	.24**	.21*	.11	.18*	.12	.01	.18*	-.12			
16. Concern with Affiliation	.10	.08	.03	.11	.05	-.15	-.14	.01	-.14	-.13	-.05	.03	-.04	.04	-.08		
17. Positive Regard	.07	.05	.02	.15	.04	.09	.01	-.03	-.01	.02	.03	.38*	.15	-.02	-.11	.25**	
18. Management of Groups	-.10	.03	-.01	.27*	-.09	.11	.01	.19*	-.04	.14	.02	.26**	-.05	.17*	-.02	.05	.03

*$p < .05$
**$p < .01$
***$p < .001$

by grouping variables based on their similarity until all variables are in one cluster. For these analyses, the smaller cluster groupings that form the summary cluster were of interest.

Although factor and cluster analysis are highly similar procedures, factor analysis has some advantages since it provides factor loadings for all variables on all factors, therefore one can see how all the variables are related rather than just the ones that are grouping together. Cluster analysis was used primarily as an additional source of information in grouping the competences and subcompetences. The results of the factor and cluster analyses of the competences are presented in Table 8.

Factor I is defined primarily by loadings of .60 and above for the competences Proactivity and Diagnostic Use of Concepts, plus Efficiency Orientation and a -.41 loading for Concern with Affiliation. The abilities defined by this factor include initiating actions, taking risks, efficiently and effectively diagnosing and solving problems, with a focus on task management rather than the people management. Factor II includes three competences: the ability to perceive events sequentially, to spend long hours on a task and reduce stress, and to build political coalitions and influence others.

Factor III is comprised of three of the seven Interpersonal Abilities, Development of Others, Management of Groups, and Positive Regard. These competences include skills in giving performance related feedback, promoting cooperation, and having faith in others. Factor IV is the weakest factor, with loadings in the .38 to .43 range. It includes the competences Self-Control, Accurate Self-Assessment, and Diagnostic Use of Concepts. The abilities grouped in this factor include replacing impulsive behavior with a more appropriate response, evaluating one's own performance in terms of strengths and weaknesses, and using theories to interpret events.

In comparing the four factors to the four competence clusters, only Factor III includes competences from the same cluster (Interpersonal Abilities). The other three factors include competences from two or three clusters.

A cluster analysis was also performed on the competences. Table 8 presents the four clusters which emerged in this analysis in the same general order in which the factors were presented. Cluster I includes four competences, three of which overlap with Factor I: Efficiency Orientation, Proactivity, and Diagnostic Use of Concepts. Cluster I also includes Accurate Self-Assessment. Cluster II includes the competences Stamina and Adaptability, Expressed Concern with Impact, and Use of Socialized Power and combines the abilities of spending long hours on tasks, reducing stress and building political coalitions with a desire to persuade others, and concern for the image of herself or the business. The first two competences in this cluster are also part of Factor II. Cluster III is made up of the same three competences as Factor III, Development of Others, Management of Groups, and Positive Regard. The competence Self-Control defines Cluster IV and is also the competence with the highest loading on Factor IV. The remaining competences are not part of any one cluster: Spontaneity; Perceptual Objectivity; Logical Thought; Conceptualization; Specialized Knowledge; Use of Unilateral Power; and Concern with Affiliation.

Table 8

Results of Factor and Cluster Analyses of Eighteen Competences

Factor I		Factor II		Factor III		Factor IV	
Competence	Loading	Competence	Loading	Competence	Loading	Competence	Loading
Proactivity	.64	Logical Thought	.58	Development of Others	.62	Self-Control	.43
Diagnostic Use of Concepts	.60	Stamina and Adaptability	.46	Management of Groups	.42	Accurate Self-Assessment	.39
Efficiency Orientation	.39	Use of Socialized Power	.42	Positive Regard	.41	Diagnostic Use of Concepts	.38

Cluster I	Cluster II	Cluster III	Cluster IV
Accurate Self-Assessment	Stamina and Adaptability	Development of Others	Self-Control
Efficiency Orientation	Expressed Concern with Impact	Management of Groups	
Proactivity		Positive Regard	
Diagnostic Use of Concepts	Use of Socialized Power		

Factor and Cluster Analyses of Subcompetences

The previous factor and cluster analyses provide information on the patterns using the competences as the unit of analysis. The purpose of the next analysis is to describe a competence model for the sample of women managers and executives using the subcompetences and grouping them into categories based on statistical analyses of the ways they were coded in our data.

A cluster and factor analysis were performed on the 68 subcompetences. Sixteen factors were specified in the analysis based on the approximate number of clusters formed in the cluster analysis. The combined results of the factor and cluster analyses are presented in Table 9 along with the competence code and number from the coding manual, and the factor loadings. The results of the factor analysis were used to interpret the cluster analysis. In 13 of the 16 groupings, the results of the two analyses are similar. Somewhat different results were found in Categories 7, 10, and 11 and so the results of both analyses are presented in Table 9. In total, 48 of the 68 subcompetences (71 percent) coded in the data were grouped into factors or clusters. The categories are presented in the order they occurred in the factor analysis.

Category 1 includes subcompetences from five different competence categories. The subcompetence with the highest loading involves the ability to change a course of action based on changes in the situation. Other skills and abilities included in this grouping are understanding of multiple perspectives, establishing causal sequences, influencing a win-win resolution of differences, and expression of feelings. Category 2 groups three skills and abilities: the ability to give directions based on authority, to interpret using theory, and to initiate action. An interest in others, the ability to reduce stress, and making a personal sacrifice for the good of the organization are the subcompetences that combine in Category 3.

Category 4 includes two subcompetences from the affective domain with factor loadings in the .75 to .79 range. The subcompetences are acting on the basis of feeling and using affiliation to build teams. Category 5 involves planning and control skills and abilities. They are acting calm in situations of high stress, making decisions based on technical knowledge, and identifying action steps toward reaching a goal. The sixth category combines the abilities to use ideas about political relationships to interpret experiences, build political coalitions, and to be concerned about the image of herself or the business. The common subcompetence in the two analyses in Category 7 is the ability to take calculated risks. The factor analysis group also includes an expressed desire to do something better, efficient use of time, and the ability to identify recurrent patterns in relationships among events. Similarly, the cluster analysis groups the ability to set goals, use explicit frameworks and technical knowledge with risk taking.

Category 8 includes abilities related to improving performance such as organizing in new and better ways, spending long hours on tasks, and having a personal standard of

Table 9

Results of the Factor and Cluster Analyses
of the Sixty-Eight Subcompetences

Factor And Cluster Category	Subcompetence	Factor Loading	Competence Category
1	P reports changing a course of action to one more appropriate based on major and stressful changes in the situation	.94	Stamina and Adaptability (5)
1	P states that each party to a conflict or disagreement has a different perspective or understanding of the issue in dispute, and P can outline those perspectives	.65	Perceptual Objectivity (1)
1	P decides upon a course of action through rationally ordering prior events into causal sequences	.53	Logical Thought (2)
1	P influences others in the direction of a win-win resolution of differences	.48	Use of Socialized Power (3)
1	P overtly expresses emerging feelings to others without first thinking about their impact	.44	Spontaneity (2)
2	P gives directions or orders based on personal authority, rules, and procedures to obtain compliant behavior of others	.65	Use of Unilateral Power (1)
2	P cites a general assumption or theory to interpret what she observes in a situation	.55	Diagnostic Use of Concepts (3)
2	P initiates the action in a task sequence rather than waiting to react to the situation as it develops	.47	Proactivity (1)
3	P expresses an interest in what specified others think, do, feel	.77	Concern With Affiliation (3)

3	P describes behaviors designed to reduce the effects of stress in a specific situation without noticeable deterioration in performance	.52	Stamina and Adaptability (4)
3	P reports a personal sacrifice or denial of an impulse or need, for the good of an overriding organizational need	.40	Self-Control (3)
4	P acts on the basis of an immediate/emergent feeling or desire without premeditation or forethought	.79	Spontaneity (1)
4	P uses affiliation, amicability, or personal contact as instrumental to building commitment to a team or a task	.75	Management of Groups (4)
5	P describes self as acting patient, calm, and in control in situations of continuous high stress	.85	Stamina and Adaptability (2)
5	P reports decisions or specific actions based upon job-specific technical knowledge	.58	Specialized Knowledge (1)
5	P identifies action steps, resources, or constraints involved in reaching a goal, where the goal represents doing something better	.45	Efficiency Orientation (5)
6	P uses ideas about political relationships among people and organizations to interpret experiences and observations	.88	Diagnostic Use of Concepts (5)
6	P builds political coalitions or potential influence networks in order to accomplish a task	.61	Use of Socialized Power (1)
6	P expresses concern for the image or reputation of herself or the business, product, or service with which she is involved	.42	Expressed Concern With Impact (2)

Table 9 continued

Factor Category			
7	P expresses a desire to do something better than has been done before; concern with unique achievement	.61	Efficiency Orientation (2)
7	P takes calculated risks and admits responsibility for success (or failure)	.53	Proactivity (4)
7	P stresses efficiency in the use of time, manpower, or resources; balances task requirements and individual needs; matches people and jobs	.49	Efficiency Orientation (4)
7	P identifies recurrent patterns in the relationships among events, data or phenomena and derives some meaning from that pattern	.47	Conceptualization (1)
Cluster Category			
7	P sets specific realistic and challenging goals and/or deadlines for task accomplishment		Efficiency Orientation (1)
7	P takes calculated risks and admits responsibility for success (or failure)		Proactivity (4)
7	P uses an explicit framework to distinguish relevant from irrelevant information in a situation		Diagnostic Use of Concepts (4)
7	P uses technical knowledge to help her assess the situation, to help access the information needed for a job, or to influence a set of events in a situation		Specialized Knowledge (2)

Table 9 continued

Factor and Cluster Category			
8	P organizes materials or activities in a new and better way to accomplish a task	.76	Efficiency Orientation (6)
8	P describes a situation in which she spent unusually long hours on a task (or tasks)	.58	Stamina and Adaptability (1)
8	P states a personal standard of excellence for task performance	.38	Efficiency Orientation (3)
9	P does not take on personally what should be a group effort	.78	Management of Groups (6)
Factor Category			
10	P uses technical knowledge to help her assess the situation, to help assess the information needed for a job, or to influence a set of events in a situation	.65	Specialized Knowledge (2)
10	P states that she held back on an impulse to say or do something and replaced impulsive behavior with a more appropriate response	.47	Self-Control (1)
Cluster Category			
10	P states that she held back on an impulse to say or do something and replaced impulsive behavior with a more appropriate response		Self-Control (1)
10	P explains a series of related or unrelated events in terms of a single concept different from a previous interpretation of the events		Conceptualization (4)
10	P describes and evaluates own performance in a situation in terms that reflect a recognition of personal strengths and/or weaknesses		Accurate Self-Assessment (1)

Table 9 continued

Factor Category			
11	P demonstrates a concern for making others feel that they can accomplish an objective or goal	.61	Development of Others (1)
11	P has faith that others are fully capable of doing good things when given the chance and illustrates with specific examples	.46	Positive Regard (2)
Cluster Category			
11	P develops subordinates or supports their self-development efforts by making available to them training opportunities, expert help, resources		Development of Others (4)
11	P has faith that others are fully capable of doing good things when given the chance and illustrates with specific examples		Positive Regard (1)
Factor and Cluster Category			
12	P differentiates an issue, problem, or concept into a set of constituent parts, citing a new concept as the basis for differentiation	.48	Conceptualization (2)
13	P provides others with additional information, resources, or tools to help them get the job done	.87	Development of Others (5)
13	P helps a subordinate to accomplish a task while permitting the individual to take personal responsibility for completing the task	.47	Development of Others (6)

Table 9 continued

14	P invites subordinates to discuss problems affecting performance	.77	Development of Others (3)
14	P gives others performance-related feedback to be used for improving or maintaining good performance	.52	Development of Others (2)
15	P plans a series of events using some framework for sequentially ordering the events	.63	Logical Thought (3)
15	P describes seeking information on her own initiative, from a wide variety of sources (standard or novel)	.60	Proactivity (5)
15	P acts to promote cooperation with or to help another work group	.52	Management of Groups (2)
15	P communicates to others the need for cooperation or teamwork	.34	Management of Groups (1)
15	P identifies recurrent patterns in the relationships among events, data, or phenomena and derives some meaning from that pattern	.33	Conceptualization (1)
15	P perceives and describes cause and effect relationships in a set of events	.31	Logical Thought (1)
16	P describes taking an action for the good of the organization at the expense of another person's feeling or status, in which regret or recognition of another person's loss is mentioned	.46	Perceptual Objectivity (4)
16	P reports not feeling angry or upset when under explicit personal attack	.39	Self-Control (2)

Category 8 includes abilities related to improving performance such as organizing in new and better ways, spending long hours on tasks, and having a personal standard of excellence. The subcompetence that defines Category 9 with a factor loading of .78 reflects the ability to not take personal credit for a group effort. The overlapping subcompetence in the two analyses for Category 10 is the ability to replace impulsive behavior with a more appropriate response. Category 11 includes a subcompetence from the competences of Positive Regard and Development of Others. The two abilities in the factor are concern for making others feel they can accomplish a goal and a belief that people can improve in performance. Similarly, the abilities in the cluster are developing subordinates or supporting their self-development efforts and having faith that others are capable of doing good things.

The sole subcompetence for Category 12 is the ability to build concepts. Categories 13 and 14 group two skills from the competence Development of Others: providing others with resources to get the job done and helping subordinates accomplish a task (Category 13), and giving performance related feedback and inviting subordinates to discuss problems affecting performance (Category 14). Category 15 includes a variety of subcompetences related to cognitive skills (seeking information, identifying recurrent patterns in relationships among events) and promoting cooperation. Finally, Category 16 includes taking an action for the good of the organization at the expense of another person's feeling or status, and not feeling angry or upset when under explicit personal attack.

Path Analyses

The previous factor and cluster analyses of the competences and subcompetences provides a great deal of information on relationships among skills and abilities demonstrated by the women managers in the Behavioral Event Interviews. At this stage of the analysis, questions about the developmental sequence of the competences and the causal relationships among them are investigated.

Path analysis is a procedure based on multiple regression used for testing and determining causal models. The frequency of times the competence was coded per manager is the unit of analysis. These scores range from zero to eleven, so the variability is fairly limited. There is greater variability in the number of times competences were coded across managers. The analysis is a series of multiple regressions of each variable (or competence) in the model on all preceding variables. The beta weights represent the path coefficients and indicate the strength of the relationships among the variables in the analysis.

We used a three stage approach to determine the causal relationships among the competences. The first step was a general path analysis among the four competence clusters. Second, we performed a path analysis on each cluster, analyzing the relationships among the competences in the cluster. Third, we did analyses of competences across clusters. In each case, a causal model was created and then tested using the multiple regression program in the Statistical Package for the Social Sciences (Nie, et al., 1975).

Path Analysis of Competence Clusters

The first path analysis was performed on the competence clusters because of their conceptual clarity, and the face validity of the grouping as they appear in the McBer Coding Manual. The Socio-Emotional Maturity cluster was hypothesized as a primary causal cluster because it is more likely related to personality and ego development variables, with abilities such as Self-Control and Spontaneity developing before job related abilities, for example. In the second phase of the model, two additional clusters are introduced, Intellectual and Interpersonal Abilities. Both are hypothesized to be related to the Socio-Emotional Maturity Cluster with the Intellectual Abilities representing the cognitive domain and the Interpersonal Abilities, the affective domain. Entrepreneurial Abilities are included last, more closely representing the job related performance dimension. The model tested the relationships in this sequential model. The results of the path analysis of the model described above are presented in Figure 3, with the corresponding correlation coefficients and beta weights.

According to the model, the abilities included in the Socio-Emotional Maturity cluster contribute almost equally to Intellectual and Interpersonal Abilities. Intellectual Abilities make a significant causal contribution to Entrepreneurial Abilities followed by the competences in the Socio-Emotional Maturity cluster, whereas Interpersonal Abilities do not contribute to the variance in the Entrepreneurial Abilities. The Socio-Emotional Maturity, Intellectual and Interpersonal Abilities Clusters combined account for 29 percent of the variance in the Entrepreneurial Abilities. This path analysis suggests that the Socio-Emotional Maturity cluster which most closely represents ego development, does indeed contribute equally to Intellectual Abilities representative of the cognitive domain, Interpersonal Abilities representative of the affective domain, and Entrepreneurial Abilities representative of more specific job related competences.

Further, Intellectual and Interpersonal abilities are correlated as well. It is interesting that the Interpersonal cluster did not relate to Entrepreneurial Abilities, even though the correlation between the two clusters is .27 ($p < .01$). Apparently, the variance contributed to Entrepreneurial Abilities by Interpersonal Abilities is accounted for by the other clusters. This may indicate that the Interpersonal and the Entrepreneurial clusters are indeed independent, and represent equally important, but independent job related competences that have their roots in Socio-Emotional Maturity and Intellectual Abilities. Implications for management educators may be that

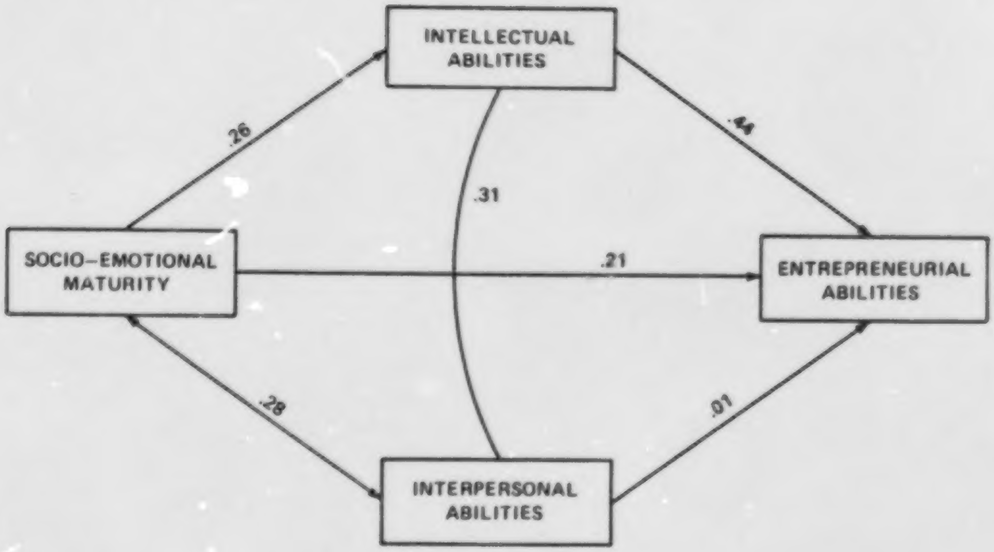


Figure 3. Path Analysis of the Competence Clusters.

educating for intellectual abilities will affect both the development of interpersonal and entrepreneurial abilities. Clearly, maturity is an important factor in manager selection. Educational experiences that promote personal growth can ultimately be expected to affect the performance of wide clusters of abilities that describe effective managerial performance.

Having described the overall causal relationships among the competence clusters, our next step is to analyze causal relationships within each cluster. The purpose of this analysis is to provide further information on the relationships among the competences.

Path Analysis of Competences: Socio-Emotional Maturity Cluster

The competences in the Socio-Emotional Maturity cluster most represent aspects of ego development. In proposing a sequence for the five competences in the cluster, the two abilities that were hypothesized as developing first were Self-Control and Spontaneity. These competences are more likely linked to characteristics developing earlier in life. The second set of abilities are more sophisticated and develop as a person matures intellectually and interpersonally. These competences include the ability to take another person's perspective and to see the situation through their eyes (Perceptual Objectivity) and the ability to evaluate one's strengths and weaknesses (Accurate

Self-Assessment). The last competence to be included in the model is Stamina and Adaptability because it describes mature coping skills which we believe follow the development of the four prior abilities. Figure 4 presents the results of the path analysis for the competences in the Socio-Emotional Maturity Cluster.

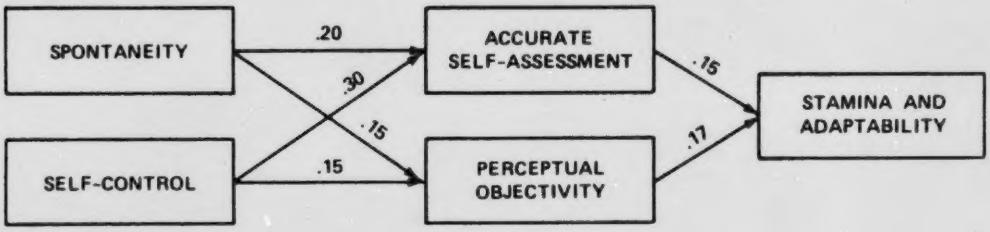


Figure 4. Path Analysis for Competences in the Socio-Emotional Maturity Cluster.

Both Spontaneity and Self-Control contribute equally to Perceptual Objectivity whereas Self-Control makes a greater contribution to Accurate Self-Assessment than Spontaneity. Considering the relationship of the four competences to Stamina and Adaptability, Perceptual Objectivity and Accurate Self-Assessment have very similar beta weights which indicates that the strength of their relationship to Stamina and Adaptability is about the same. The four competences account for five percent of the variance in Stamina and Adaptability.

Entrepreneurial Abilities Cluster

Because there are only two competences in the Entrepreneurial Abilities cluster, a path analysis is unnecessary. The competences of Proactivity and Efficiency Orientation are significantly correlated ($r = .40$, $p < .001$). We hypothesize that Proactivity, which involves risk-taking and a general forward-looking approach to management, contribute to Efficiency Orientation, with its emphasis on task performance.

Path Analysis of Competences: Intellectual Abilities Cluster

We created and tested a model for three of the four competences included in the Intellectual Abilities cluster. (Specialized Knowledge was not included because it was coded only six times in our data and it is hypothesized to be an independent cluster in the original formulation of the model.) We hypothesized that a causal relationship exists between the three competences, with Logical Thought occurring first from a developmental perspective. The abilities included in Logical Thought are perceiving and describing cause and effect relationships in a series of events. The second competence which illustrates a higher level of complexity in thinking is Conceptualization, or the ability to perceive and describe a situation using a concept. Diagnostic Use of Concepts was hypothesized to be the most developmentally complex of the three abilities, because it involves using concepts to interpret and analyze situations, and is central to acting. Figure 5 presents the results of the path analysis of the three competences.

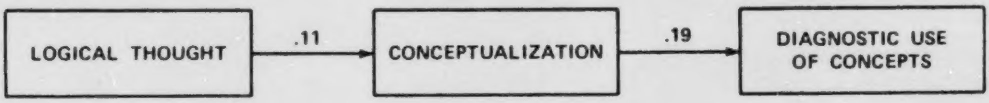


Figure 5. Path Analysis for Competences in the Intellectual Abilities Cluster.

The relationship between Conceptualization and Diagnostic Use of Concepts is stronger than the one between Logical Thought and Conceptualization. It is important to note that Logical Thought and Conceptualization contribute only five percent to the variance in Diagnostic Use of Concepts so these cognitive abilities can be viewed as independent.

Path Analysis of Competences: Interpersonal Abilities Cluster

Six of the seven abilities in the Interpersonal Abilities Cluster were used in the causal model. (Concern with Affiliation was omitted because it was coded only five times in the data.) The competences in this causal model are viewed more as interactive than causal, with two parallel paths merging at the outcome competence, Development of Others. The competences Use of Unilateral Power and Management of Groups are related to each other as components of leadership. The other dimension includes the competences Use of Socialized Power, Expressed Concern with Impact and Positive Regard. These competences are grouped because they are more likely to be attitudinal or dispositional characteristics (a belief in others, a need to persuade or influence). The two dimensions are conceived of as independent sets of abilities, both contributing to the outcome competence, Development of Others. The model is presented in Figure 6 with the corresponding path coefficients. The relationships among the two competences related to leadership (Management of Groups and

Use of Unilateral Power), and the three competences, two of which are more attitudinal in nature (Use of Socialized Power, Expressed Concern with Impact and Positive Regard) are very similar. Positive Regard is more strongly related to Development of Others than is Management of Groups. All Interpersonal Abilities in the model account for 26 percent of the variance in the Development of Others competence.

Path Analysis of All Competences

A final path analysis was performed on a hypothesized model of the competences. The competences included in the model were chosen by using factor analysis as a data reduction technique. The purpose is to reduce the number of competences to a more manageable number. Each of the clusters with more than two competences was factor analyzed to create as many independent factors as existed in the cluster. Factor loadings for each of the competences in the three clusters are presented in Table 10.

The competences that loaded strongly on the factors can be thought of as the more independent abilities, and therefore the ones to be included in the final path analysis. Only those competences with loadings of .50 or above are included in the final path analysis.

The factor analysis for the Socio-Emotional Maturity Cluster produced two factors. One factor consisted of the competence Self-Control (.57); the other, Accurate Self-Assessment (.50) and Spontaneity (.74). Two factors were created for Intellectual Abilities. Diagnostic Use of Concepts and Conceptalization make up the first factor and no competence had loadings above .38 on the second factor. The factor analysis for the Interpersonal Abilities created three factors. The first factor was Positive Regard (.93). Development of Others was the highest loading competence on the second factor (.66) and no competence loaded high enough on the third factor.

In constructing the hypothetical model of causality, we used concepts similar to those in the path analysis of the competence clusters. Competences from Socio-Emotional Maturity (Self-Control, Spontaneity, and Accurate Self-Assessment) were presented first because of their primary relationship to ego development. They were followed by Interpersonal Abilities, Positive Regard and Development of Others on the one hand, and Diagnostic Use of Concepts and Conceptualization from the Intellectual Abilities cluster on the other. Entrepreneurial Abilities, thought of as more specific job related competences in these analyses, are presented last because they are hypothesized as being an outcome of the abilities that precede them in the model. Efficiency Orientation is linked to Interpersonal Abilities, and Proactivity is linked to Intellectual Abilities. Figure 7 presents the model for the path analysis of the competences with the appropriate path coefficients (beta weights). The path coefficients range from .14 to .37.

No one path is particularly strong or weak, suggesting that the abilities are fairly independent. Self-Control and

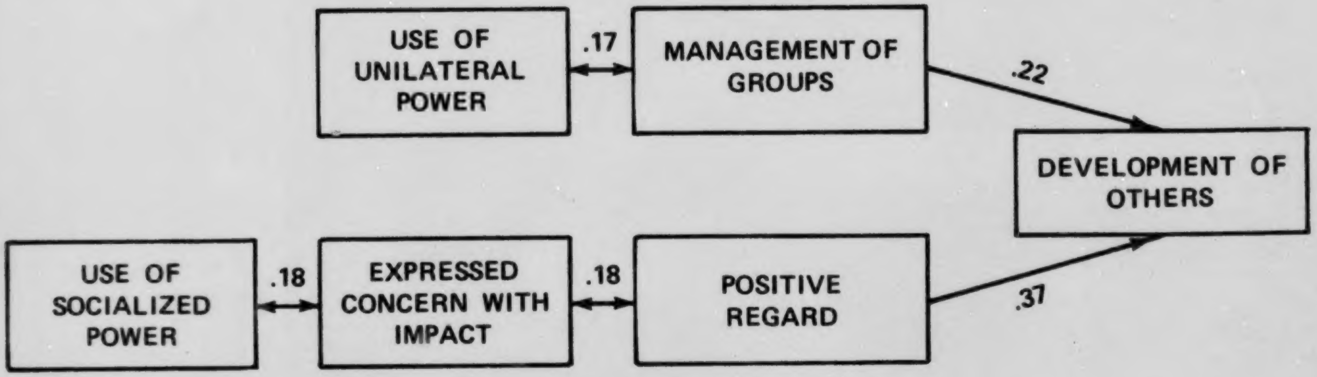

USE OF UNILATERAL POWER
.17
MANAGEMENT OF GROUPS
.22
DEVELOPMENT OF OTHERS
USE OF SOCIALIZED POWER
.18
EXPRESSED CONCERN WITH IMPACT
.18
POSITIVE REGARD
.37

Figure 6. Path Analysis of Competences in the Interpersonal Abilities Cluster.

Table 10

Factor Loadings of the Competences in Each Cluster

	Factor I	Factor II	Factor III
Socio-Emotional Maturity Cluster			
Self-Control	.57	-.09	
Spontaneity	.03	.74	
Perceptual Objectivity	.25	.16	
Accurate Self-Assessment	.50	.20	
Stamina and Adaptability	.25	.02	
Intellectual Abilities			
Logical Thought	.00	.32	
Conceptualization	.56	.34	
Diagnostic Use of Concepts	.53	-.36	
Specialized Knowledge	-.03	-.27	
Interpersonal Abilities			
Development of Others	.29	.66	.31
Expressed Concern with Impact	.07	.02	.41
Use of Unilateral Power	-.01	.41	-.09
Use of Socialized Power	-.20	-.11	.46
Concern for Affiliation	.27	.02	-.12
Positive Regard	.93	.07	.19
Management of Groups	.01	.40	-.04

Spontaneity contribute to the ability of accurately self-assess, which leads to the development of Intellectual and Interpersonal Abilities, making a stronger contribution to the former than to the latter. The relationship between Positive Regard and Development of Others is a stronger one, especially when compared to the relationship between Diagnostic Use of Concepts and Conceptalization. The final links in the path analysis are almost equally strong. Development of Others is linked to Efficiency Orientation, the ability to manage tasks efficiently. The cognitive abilities of Diagnostic Use of Concepts and Conceptualization are viewed as one dimension in this model based on their similar loadings on Factor I in the factor analysis, and these cognitive abilities are linked with the more job related dimension of Proactivity.

Hypothetical Competence Model of Effective Managerial Performance

A hypothetical, logical model of the competences of women managers and executives was then created to better describe the relationships among competences included in the final path analysis and those competences excluded. This hypothetical model

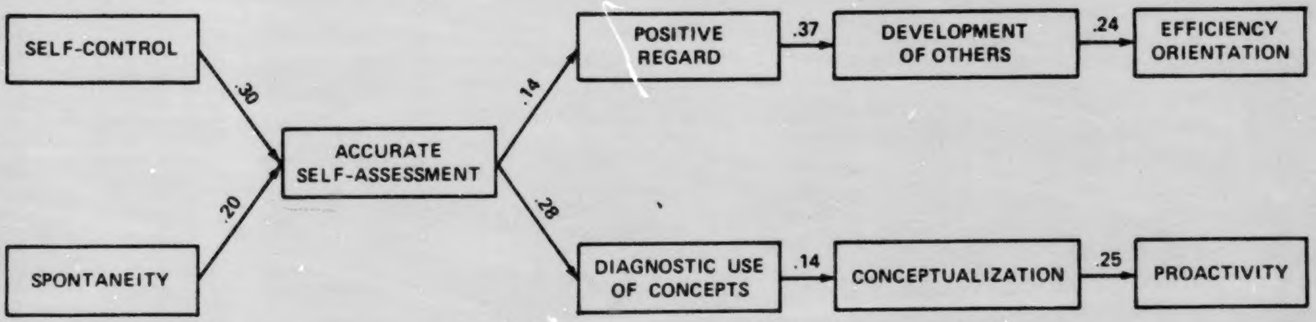

SELF-CONTROL
SPONTANEITY
.30
.20
ACCURATE SELF-ASSESSMENT
.14
.28
POSITIVE REGARD
DIAGNOSTIC USE OF CONCEPTS
.37
.14
DEVELOPMENT OF OTHERS
CONCEPTUALIZATION
.24
.25
EFFICIENCY ORIENTATION
PROACTIVITY

Figure 7. Path Analysis of Competences

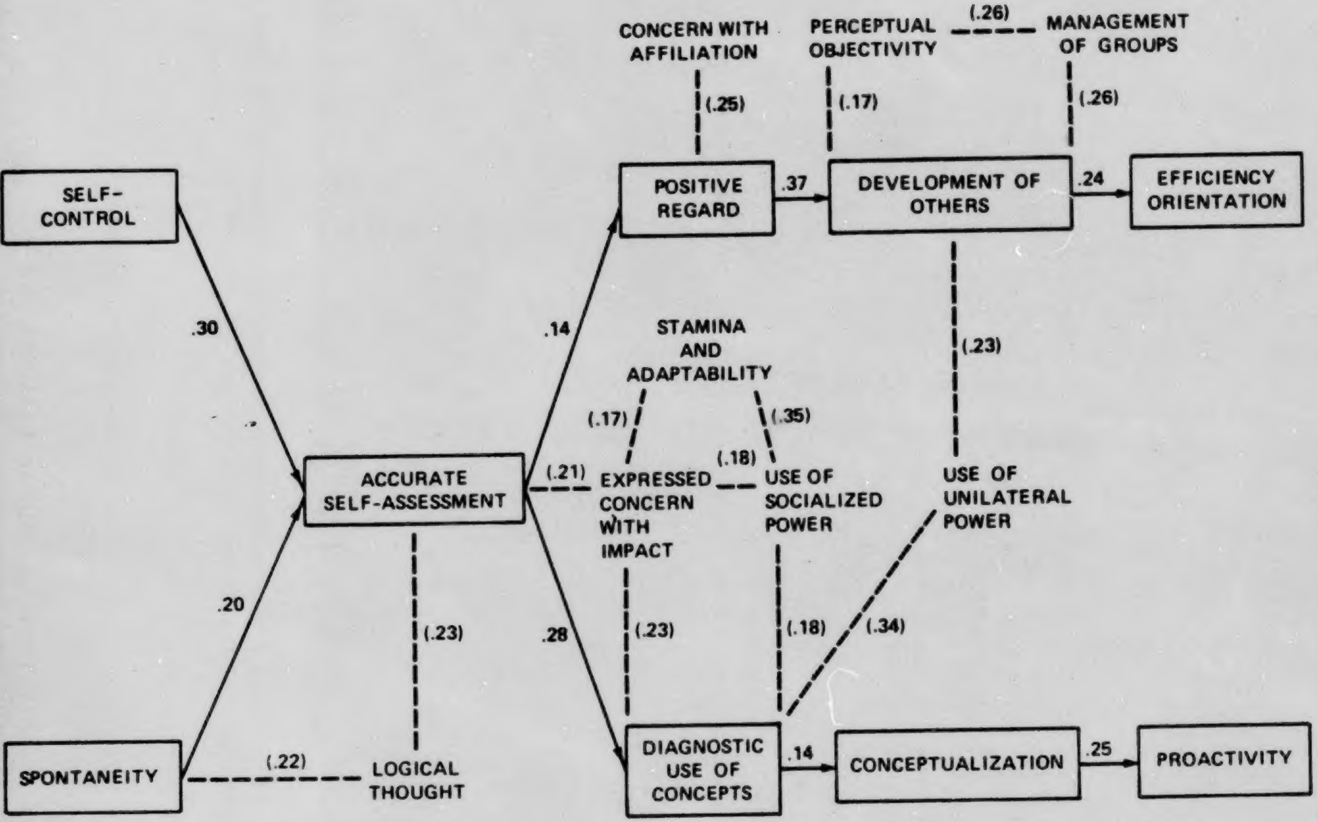
combines the two sets of competences. We attempted to show as many relationships among the competences as possible.

The competences excluded in the final path analysis were linked into the model if they showed significant, positive correlations (see Table 7) with the competences used in the final path analysis. To be linked to a competence in the final, logical model, a formerly excluded competence had to be significantly correlated with a competence in the final path analysis. Where possible, competences excluded from the final path analysis were now inserted where their multiple relationships could be shown. For example, Use of Unilateral Power is linked to Development of Others (*r* = .23) and Diagnostic Use of Concepts (*r* = .34), although it is also correlated with Management of Groups (*r* = .17). The additional competences in the model should be interpreted as part of, or related to, the competences to which they are linked. Figure 8 presents the hypothetical, logical model of competence for our sample of women managers and executives. The competences that were part of the final path analysis are presented in boxes and connected by solid lines. The other eight competences are connected to the model by broken lines. The bivariate correlation coefficients, which are the basis for linking the competences to the model, are presented in parentheses.

According to the logical model, the key abilities seem to be Accurate Self-Assessment, Diagnostic Use of Concepts and Development of Others, judging from the ways in which the other competences link into the path analysis. Expressed Concern with Impact is positively correlated with two competences in the model, Accurate Self-Assessment (*r* = .21) and Diagnostic Use of Concepts (*r* = .23). Also correlated with Diagnostic Use of Concepts are both of the Interpersonal skills, Use of Socialized Power (*r* = .18) and Use of Unilateral Power (*r* = .34). The competence Stamina and Adaptability is related to both Expressed Concern with Impact (*r* = .21) and Use of Socialized Power (*r* = .35), while Use of Unilateral Power is also correlated with Development of Others (*r* = .23).

Perceptual Objectivity and Management of Groups are correlated with each other (*r* = .26) and each is correlated with Development of Others. The latter is related to Perceptual Objectivity, (*r* = .17), and Management of Groups, (*r* = .26). Predictably, Concern with Affiliation is significantly related to Positive Regard. Finally, Logical Thought is correlated with Accurate Self-Assessment (*r* = .23) and Spontaneity (*r* = .22), although it shares a similar relationship to Use of Socialized Power (*r* = .21) and Development of Others (*r* = .21).

In analyzing relationships among competences across clusters, this model presents the dominant relationship. The key abilities that seem to be related to at least some of the other abilities are Accurate Self-Assessment, Diagnostic Use of Concepts, and Development of Others. It can be argued that those abilities are the most important because they are integral parts of many of the other competences, at least for our sample of women managers and executives.



CONCERN WITH AFFILIATION
PERCEPTUAL OBJECTIVITY
(.26)
MANAGEMENT OF GROUPS
(.25)
(.17)
(.26)
SELF-CONTROL
POSITIVE REGARD
.37
DEVELOPMENT OF OTHERS
.24
EFFICIENCY ORIENTATION
.30
.14
STAMINA AND ADAPTABILITY
(.23)
(.17)
(.35)
(.18)
ACCURATE SELF-ASSESSMENT
(.21)
EXPRESSED CONCERN WITH IMPACT
USE OF SOCIALIZED POWER
USE OF UNILATERAL POWER
.20
(.23)
.28
(.23)
(.18)
(.34)
SPONTANEITY
(.22)
LOGICAL THOUGHT
DIAGNOSTIC USE OF CONCEPTS
.14
CONCEPTUALIZATION
.25
PROACTIVITY

igure 8. Hypothetical Model of Competence in Women Managers and Executives.

Note. Bivariate correlation coefficients are placed in parentheses. Numbers not in parentheses are path coefficients.

The statistical and logical models of competence present hypotheses about the sequence in which the competences develop. We believe these relationships among the competences need to be considered by management educators interested in designing programs to teach these abilities.

Management Performance Characteristics Perceived as Descriptive of Outstanding Versus Average Performers

The two major sources of data for this study are the Behavioral Event Interview and the Management Performance Characteristics Inventory. The purpose of the interview is to collect examples of actual manager behavior on the job in both effective and ineffective situations. The Management Performance Characteristics Inventory (MPCI) measures managers' perceptions of the performance characteristics that are relevant, essential for hiring and training, and that discriminate outstanding from average performers in management.

The construction of the MPCI is described in the Method section. The instrument consists of 160 performance characteristics in statement form. For each statement, a manager completing the inventory is instructed to cross out any performance characteristic that is not relevant to management performance. Second, a manager indicates if the characteristic is absolutely essential to consider for hiring or training a person in his or her own present position. Finally, a manager makes a judgment on whether the statement is descriptive of outstanding or average performers in management.

The response rate for the MPCI is 77 percent (*n* = 78) of the total sample (*n* = 101). The MPCI subsample is not significantly different from the total interview sample on any of the variables from the Management Careering Questionnaire except marital status (married women were less likely to return the inventory).

Frequency of Response to Each Management Performance Characteristic

Table 11 presents the number and percent of responses in each of six categories for all characteristics on the MPCI:

- not relevant
- essential for hiring or training a person in your present position
- essential for hiring or training and average performers in management have this characteristic
- average performers in management have this characteristic

- essential for hiring or training and outstanding performers in management have this characteristic

- outstanding performers in management have this characteristic

For most statements, the majority of the responses are in the categories "Essential/Average" and "Essential/Outstanding."

Performance Characteristics Not Relevant to Management

There are five statements that 50 percent or more of the managers perceived as being "Not Relevant" to management. Ranked by percent responding, from highest to lowest, they are:

- Strong need for affiliation (statement number 31)

- A drive for prestige, mobility (47)

- A conforming personality (155)

- Ability to confine decision-making to the "operating" level (87)

- Luck (being in the right place at the right time) (58)

On all other characteristics, responses are either concentrated in one of the other five categories or distributed across categories. In reviewing the pattern of responses across characteristics, very few responses fall into the "Essential Only" category. The responses in the category are in the zero to 5 percent range with one or two exceptions (6 and 7 percent). If a characteristic was perceived as essential by the managers, it was also seen as descriptive of either average or outstanding managers.

Table 11

Frequency of Responses to each Management Performance Characteristic by Response Category

	Performance Characteristic	N	Not Relevant		Essential		Essential/ Average		Average		Essential/ Out-standing		Average	
			n	%	n	%	n	%	n	%	n	%	n	%
1.	Ability to admit errors in decision-making	77	4	5	2	3	15	19	10	13	32	42	14	18
2.	Ability to distinguish between what is important, or controllable, and what is not	78	2	3	4	5	30	38	1	1	39	50	2	3
3.	Ability to use sanctions effectively	76	20	26	0	0	15	20	15	20	17	22	9	12
4.	Ability to monitor the activities of others to gain needed information	78	7	9	1	1	36	46	17	22	16	21	1	1
5.	Ability to defend decisions	76	4	5	3	4	28	37	9	12	24	32	8	11
6.	Ability to deal effectively with the discrepancy between the "real" and the "ideal"	78	9	12	2	3	20	26	12	15	27	35	8	10
7.	Ability to motivate others	76	1	1	4	5	25	32	2	3	43	56	2	3
8.	Self-confidence	78	1	1	4	5	43	55	8	10	20	26	2	3
9.	Ability to relate facts from diverse sources to yield conclusions	77	6	8	1	1	25	32	7	9	35	45	3	4
10.	Ability to judge trends effectively	77	9	12	1	1	12	16	10	13	34	44	11	14
11.	Orientation to action, not a dreamer	77	8	10	2	3	34	44	12	16	16	21	5	6
12.	Ability to identify inconsistencies, subtle relationships in information	77	9	12	0	0	12	16	9	12	32	42	15	19
13.	A primary loyalty to the employer or company	77	14	18	1	1	32	42	17	22	10	13	3	4
14.	Willingness to consider interests and objectives of other parts of the organization in developing plans and actions	78	3	4	2	3	18	23	6	8	40	51	9	12
15.	Ability to ensure that personnel and positions are properly matched	77	5	6	2	3	26	34	14	18	23	30	7	9

Table 11 continued

	Performance Characteristic	N	Not Relevant		Essential		Essential/ Average		Average		Essential/ Out- standing		Average	
			n	%	n	%	n	%	n	%	n	%	n	%
16.	Ability to negotiate decisions with a variety of others	78	0	0	2	3	36	46	6	8	31	40	3	4
17.	Ability to work toward long-range outcomes	77	2	3	2	3	24	31	11	14	29	38	9	12
18.	Ability to avoid failure situations	74	23	31	1	1	14	19	15	20	15	20	6	8
19.	Ability to work effectively with the management chain (up and down) to resolve problems or contentions	78	0	0	4	5	35	45	4	5	35	45	0	0
20.	Ability to cope with change or setbacks	78	1	1	4	5	29	37	5	6	38	49	1	1
21.	Ability to prioritize	77	0	0	4	5	39	51	5	6	28	36	1	1
22.	Ability to manipulate others through interpersonal skills	74	13	18	0	0	8	11	12	16	27	36	14	19
23.	Trustworthiness	78	4	5	3	4	53	68	5	6	10	13	3	4
24.	Ability to identify recurrent patterns in relationships	74	12	16	0	0	18	24	19	26	19	25	6	8
25.	Willingness to promote development of subordinates	77	1	1	1	1	21	27	4	5	36	47	14	18
26.	Ability to plan, document, and track the progress of programs	77	3	4	1	1	43	56	9	12	16	21	5	6
27.	Orientation toward results	77	3	4	3	4	33	43	7	9	29	38	2	3
28.	Ability to perform under less than optimum conditions	78	3	4	3	4	36	46	14	18	20	26	2	3
29.	Ability to organize unstructured situations and see the implications of that organization	77	6	8	3	4	11	14	10	13	37	48	10	13
30.	Ability to speak well	77	3	4	3	4	32	42	11	14	24	31	4	5
31.	Strong need for affiliation	73	43	59	1	1	12	16	14	19	3	4	0	0
32	Intelligence	78	2	3	3	4	50	64	7	9	14	18	2	3
33.	Ability to make decisions under conditions of risk	77	3	4	1	1	13	17	2	3	47	61	11	14

Table 11 continued

	Performance Characteristic	N	Not Relevant		Essential		Essential/ Average		Average		Essential/ Out-standing		Average	
			n	%	n	%	n	%	n	%	n	%	n	%
34.	Ability to identify and evaluate alternatives in solving problems	78	0	0	2	3	30	38	6	8	36	46	4	5
35.	Ability to coordinate multiple organization levels	76	8	11	1	1	17	22	7	9	30	39	13	17
36.	Ability to act as a model for desirable behavior as a way of influencing outcomes	77	12	16	2	3	17	22	10	13	21	27	15	19
37.	Ability to balance customer or client demands against company loyalty	76	17	22	2	3	22	29	14	18	12	16	9	12
38.	Ability to adapt to norms of varying situations	77	9	12	4	5	29	38	19	25	11	14	5	6
39.	Ability to maintain objectivity under stressful conditions	77	0	0	4	5	15	19	3	4	39	64	6	8
40.	Willingness to continue one's education	75	13	17	1	1	19	25	19	25	14	19	9	12
41.	Willingness to promote one's own accomplishments	75	23	31	1	1	13	17	23	31	8	11	7	9
42.	Ability to keep proper communication channels open	78	0	0	4	5	41	53	11	14	21	27	1	1
43.	Ability to balance expedient against humanistic goals	77	9	12	1	1	15	19	16	21	22	29	14	18
44.	Ability to give orders and directions unilaterally	78	10	13	1	1	31	40	16	21	17	22	3	4
45.	Ability to act as a representative of the company	75	4	5	3	4	40	53	14	19	11	15	3	4
46.	Ability to promote cooperation	77	2	3	4	5	33	43	9	12	26	34	3	4
47.	A drive for prestige, mobility	75	41	55	0	0	6	8	9	12	8	11	11	15
48.	Ability to allocate work with a sensitivity to group cooperation and productivity	78	2	3	1	1	27	35	12	15	29	37	7	9
49.	Ability to set limits for subordinates	78	15	19	1	1	33	42	21	27	7	9	1	1
50.	Ability to interpret data	78	3	4	2	3	43	55	11	14	15	19	4	5
51.	Ability to predict outcome or impact	77	6	8	2	3	19	25	6	8	32	42	12	16

Table 11 continued

	Performance Characteristic	N	Not Relevant		Essential		Essential/ Average		Average		Essential/ Out-standing		Average	
			n	%	n	%	n	%	n	%	n	%	n	%
52.	Ability to empathize	78	7	9	1	1	34	44	16	21	14	18	6	8
53.	Ability to write well	76	5	7	2	3	35	46	8	11	20	26	6	8
54.	Ability to separate significant from insignificant elements in complex situations	78	4	5	2	3	20	26	5	6	33	42	14	18
55.	Ability to make decisions which cause no one loss of face	78	29	37	1	1	6	8	9	12	24	31	9	12
56.	Ability to influence others	78	1	1	3	4	29	37	7	9	31	40	7	9
57.	Ability to take charge quickly	78	1	1	3	4	19	24	7	9	40	51	8	10
58.	Luck (being in the right place at the right time)	74	37	50	2	3	9	12	14	19	5	7	7	9
59.	Respect for authority	77	10	13	1	1	35	45	26	34	4	5	1	1
60.	Ability to think logically	78	1	1	2	3	44	56	10	13	20	26	1	1
61.	Ability to listen critically	78	6	8	1	1	18	23	11	14	35	45	7	9
62.	Ability to organize time effectively	78	0	0	2	3	30	38	1	1	43	55	2	3
63.	Ability to reassess priorities	78	2	3	2	3	31	40	7	9	28	36	8	10
64.	Ability to interpret effectively	78	1	1	2	3	31	40	14	18	27	35	3	4
65.	Ability to relate data to problem-solving activity	78	6	8	1	1	29	37	12	15	24	31	6	8
66.	Ability to allocate work realistically	78	4	5	2	3	42	54	18	23	9	12	3	4
67.	Willingness to revise plans when necessary	78	0	0	3	4	42	54	15	19	14	18	4	5
68.	Ability to form relationships	77	14	18	2	3	35	45	18	23	5	6	3	4
69.	Ability to anticipate the future	77	6	8	1	1	16	21	6	8	34	44	14	18
70.	Ability to develop alternatives	78	1	1	5	6	27	35	8	10	33	42	4	5
71.	Ability to provide appropriate feedback to subordinates, peers, and superiors	77	0	0	2	3	35	45	4	5	34	44	2	3
72.	Ability to balance long-range against short-range goals	77	3	4	1	1	22	29	9	12	29	38	13	17

Table 11 continued

	Performance Characteristic	N	Not Relevant		Essential		Essential/ Average		Average		Essential/ Out-standing		Average	
			n	%	n	%	n	%	n	%	n	%	n	%
73.	Good memory	78	12	15	1	1	27	35	16	21	16	21	6	8
74.	Ability to exercise leadership skills	78	1	1	3	4	30	38	5	6	33	42	6	8
75.	Strong sense of identity	77	15	19	0	0	20	26	13	17	19	25	10	13
76.	Ability to provide appropriate resources so that the work may go on	78	11	14	1	1	40	51	11	14	8	10	7	9
77.	Stamina, persistence	78	4	5	3	4	20	26	12	15	33	42	6	8
78.	Ability to formulate realistic plans and goals	78	1	1	3	4	39	50	6	8	25	32	4	5
79.	Ability to know when to respond to interpersonal cues	77	10	13	2	3	17	22	10	13	28	36	10	13
80.	Ability to create symbols of group identity	75	28	37	1	1	12	16	10	13	12	16	12	16
81.	Ability to recognize opportunities when available	74	6	8	2	3	12	16	13	18	30	41	11	15
82.	Concern for public image of the company or product	76	7	9	3	4	36	47	12	16	16	21	2	3
83.	Ability to address conflict directly and tactfully	78	0	0	2	3	15	19	3	4	47	60	11	14
84	Ability to negotiate individual interests to create a result satisfactory to all	75	6	8	3	4	16	21	10	13	24	32	16	21
85.	High capacity for work	77	7	9	4	5	19	25	4	5	36	47	7	9
86.	Managerial experience	75	15	20	5	7	28	37	14	19	10	13	3	4
87.	Ability to confine decision-making to the "operating" level	71	38	54	0	0	10	14	16	23	3	4	4	6
88.	Ability to match resources to tasks	78	6	8	0	0	38	49	18	23	11	14	5	6
89.	Ability to balance personal responsibility against the need for delegation	77	2	3	0	0	28	36	12	16	28	36	7	9
90.	A definite sense of one's career path	76	16	21	1	1	13	17	13	17	18	24	15	20
91.	Ability to exercise power effectively	77	4	5	1	1	14	18	10	13	31	40	17	22

Table 11 continued

Performance Characteristic	N	Not Relevant		Essential		Essential/ Average		Average		Essential/ Out- standing		Average	
		n	%	n	%	n	%	n	%	n	%	n	%
92. Ability to balance customer or client demands against company needs	77	14	18	2	3	33	43	16	21	8	10	4	5
93. Sponsorship within the organization	75	26	34	1	1	14	18	12	16	8	11	14	18
94. Ability to successfully alter intended courses of action, if necessary	78	2	3	2	3	24	31	10	13	33	42	7	9
95. Willingness to be a team player	77	3	4	1	1	45	58	8	10	16	21	4	5
96. Creativity	78	5	6	1	1	12	15	5	6	49	63	6	8
97. Relevant technical skills	76	5	7	0	0	52	68	11	14	7	9	1	1
98. Ability to conceptualize	76	4	5	1	1	24	32	4	5	34	45	9	12
99. Ability to assert authority, exercise leadership	76	0	0	3	4	30	39	7	9	32	42	4	5
100. Ability to negotiate viable alternative courses of action	76	1	1	1	1	26	34	8	11	31	41	9	12
101. Ability to make decisions in the face of several alternatives	78	1	1	2	3	33	42	3	4	32	41	7	9
102. Ability to discriminate regarding what and when to delegate	78	3	4	1	1	32	41	11	14	23	29	8	10
103. A high need for achievement	77	12	16	1	1	13	17	4	5	29	38	18	23
104. Ability to provide technical information to subordinates, peers, and superiors	77	9	12	2	3	40	52	16	21	9	12	1	1
105. Ability to carry out directives from above appropriately	78	2	3	3	4	50	64	15	19	8	10	0	0
106. Ability to balance company loyalty against family loyalty	75	24	32	1	1	16	21	19	25	9	12	6	8
107. Ability to take decisive, firm positions	77	1	1	1	1	22	29	11	14	34	44	8	10
108. Reliability, consistency	77	2	3	2	3	46	60	13	17	14	18	0	0
109. Ability to make decisions that will improve the general status of the company	76	7	9	1	1	18	24	15	20	25	33	10	13
110. Common sense	77	0	0	2	3	46	60	5	6	22	29	2	3

Table 11 continued

Performance Characteristic	N	Not Relevant		Essential		Essential/ Average		Average		Essential/ Out-standing		Average	
		n	%	n	%	n	%	n	%	n	%	n	%
111. Ability to function effectively in a context of conflicting information	77	5	6	1	1	11	14	8	10	39	51	13	17
112. Ability to conceptualize the "real" versus the "ideal"	75	6	8	3	4	21	28	12	16	24	32	9	12
113. Ability to synthesize	72	8	11	2	3	19	26	15	21	20	28	8	11
114. Ability to push one's own ideas forward despite opposition	76	6	8	1	1	9	12	9	12	35	46	16	21
115. Effective knowledge of communications skills	77	2	3	3	4	36	47	6	8	29	38	1	1
116. Willingness to seek information from a variety of sources	77	2	3	3	4	33	43	15	19	20	26	4	5
117. Concern for the self-image one projects to others	75	9	12	1	1	26	35	23	31	9	12	7	9
118. Ability to use available technical knowledge in making decisions	75	5	7	1	1	40	53	20	27	7	9	2	3
119. Maturity	76	3	4	2	3	48	63	9	12	12	16	2	3
120. A belief in people	75	6	8	1	1	40	53	11	15	12	16	5	7
121. Ability to deal with concepts as well as facts	77	2	3	1	1	23	30	7	9	36	47	8	10
122. Ability to put limits on affiliation in the interest of the task	72	18	25	0	0	19	26	16	22	13	18	6	8
123. Ability to formulate plans to achieve job objectives	77	0	0	0	0	41	53	11	14	20	26	5	6
124. Strategic contacts in the management system	76	9	12	1	1	11	14	10	13	27	36	18	24
125. Ability to build coalitions to accomplish tasks	76	9	12	1	1	16	21	13	17	23	30	14	18
126. Ability to delegate authority appropriately	77	2	3	2	3	38	49	6	8	23	30	6	8
127. Ability to maintain consistent expectations	76	11	14	1	1	26	34	16	21	13	17	9	12
128. Ability to manipulate the system	74	26	35	0	0	5	7	12	16	15	20	16	22

Table 11 continued

	Performance Characteristic	N	Not Relevant		Essential		Essential/ Average		Average		Essential/ Out-standing		Average	
			n	%	n	%	n	%	n	%	n	%	n	%
129.	Willingness to disseminate information to subordinates	77	2	3	1	1	34	44	12	16	26	34	2	3
130.	Ability to observe accurately	77	1	1	1	1	29	38	16	21	25	32	5	6
131.	Ability to use feedback and feedback opportunities constructively	76	1	1	1	1	27	36	8	11	28	37	11	14
132.	Ability to perceive when the company's goals and one's own goals mesh	76	7	9	2	3	23	30	18	24	15	20	11	14
133.	Ability to measure progress	77	5	6	2	3	37	48	19	25	12	16	2	3
134.	Ability to manage external pressures and influence effectively	76	2	3	2	3	16	21	12	16	36	47	8	11
135.	Self-control	77	1	1	2	3	37	48	11	14	21	27	5	6
136.	Ability to function effectively in a context of conflicting expectations	76	8	11	0	0	12	16	8	11	35	46	13	17
137.	Spontaneity	76	17	22	0	0	17	22	13	17	21	28	8	11
138.	High visibility to peers and superiors	75	16	21	0	0	17	23	9	12	17	23	16	21
139.	Ability to present a clear position and press for a decision when required	78	1	1	1	1	17	22	3	4	46	59	10	13
140.	Flexibility, adaptability	78	0	0	3	4	36	46	6	8	32	41	1	1
141.	Ability to relate to the community in ways relevant to the company	76	24	32	3	4	15	20	14	18	13	17	7	9
142.	Ability to recognize change and modify behavior accordingly	78	1	1	2	3	25	32	12	15	29	37	9	12
143.	Ability to inspire others	77	3	4	1	1	17	22	6	8	39	51	11	14
144.	Ambition, a desire to succeed	77	6	8	0	0	23	30	9	12	26	34	13	17
145.	Accountability for decisions	78	1	1	1	1	49	63	4	5	18	23	5	6
146.	Ability to apply explicit frameworks or theories to interpret events	75	21	28	0	0	18	24	12	16	14	19	10	13
147.	Knowledge of the organizational system's operation as a whole	78	1	1	0	0	32	41	12	15	22	28	11	14

Table 11 continued

Performance Characteristic	N	Not Relevant		Essential		Essential/ Average		Average		Essential/ Out-standing		Average	
		n	%	n	%	n	%	n	%	n	%	n	%
148. Ability to design and monitor control systems	77	14	18	0	0	29	38	14	18	12	16	8	10
149. Concern with the work of subordinates in terms of overall trends, processes, and resources	77	6	8	1	1	28	36	20	26	19	25	3	4
150. Sustained belief in one's own work as valuable	77	5	6	2	3	38	49	7	9	17	22	8	10
151. Ability to evaluate outcomes	77	2	3	3	4	33	43	15	19	15	19	9	12
152. Enthusiasm	78	3	4	4	5	34	44	8	10	24	31	5	6
153. Ability to self-assess accurately	77	3	4	2	3	15	19	8	10	30	39	19	25
154. Ability to persuade others	76	0	0	4	5	25	33	8	11	33	43	6	8
155. A conforming personality	75	41	55	0	0	14	19	17	23	2	3	1	1
156. Ability to adapt one's communication style to the audience	77	9	12	2	3	15	19	10	13	34	44	7	9
157. Ability to ensure that practical constraints are considered in decision-making	77	3	4	2	3	36	47	20	26	14	18	2	3
158. Initiative, self-motivation	77	0	0	0	0	33	43	7	9	33	43	4	5
159. Ability to develop and document viable alternative courses of action	77	3	4	0	0	30	39	11	14	24	31	9	12
160. Aggressiveness	76	18	24	0	0	16	21	11	14	22	29	9	12

Performance Characteristics Essential for Hiring and Training and Decriptive of Average Managers

Throughout the inventory, the highest percent of responses fell into the categories "Essential/ Average" and "Essential/Outstanding." Fifty percent or more of the managers agreed that the following characteristics (ranked from highest to lowest) are essential for hiring and training and describe average managers:

- Trustworthiness (statement number 23)
- Relevant technical skills (97)
- Intelligence (32)
- Ability to carry out directives from above appropriately (105)
- Maturity (119)
- Accountability for decisions (145)
- Reliability, consistency (108)
- Common sense (110)
- Willingness to be a team player (95)
- Ability to plan, document, and track the progress of programs (26)
- Ability to think logically (60)
- Self-confidence (8)
- Ability to interpret data (50)
- Ability to allocate work realistically (66)
- Willingness to revise plans when necessary (67)
- Ability to keep proper communication channels open (42)
- Ability to use available technical knowledge in making decisions (118)
- A belief in people (120)
- Ability to formulate plans to achieve job objectives (123)
- Ability to act as a representative of the company (45)
- Ability to provide technical information to subordinates, peers, and superiors (104)
- Ability to prioritize (21)
- Ability to provide appropriate resources so the work may go on (76)
- Ability to formulate realistic plans and goals (78)

Performance Characteristics Essential for Hiring and Training and Descriptive of Outstanding Managers

Fifty percent or more of the managers who responded to the MPCI perceived the following characteristics (ranked from highest to lowest) to be essential for hiring or training and descriptive of outstanding managers:

- Ability to maintain objectivity under stressful conditions (statement number 39)
- Creativity (96)
- Ability to make decisions under conditions of risk (33)
- Ability to address conflict directly and tactfully (83)
- Ability to present a clear position for a decision when required (139)
- Ability to motivate others (7)
- Ability to organize time effectively (62)
- Willingness to consider interests and objectives of other parts of the organization in developing plans and actions (14)
- Ability to take charge quickly (57)
- Ability to function effectively in the context of conflicting information (111)
- Ability to inspire others (143)
- Ability to distinguish between what is important, or controllable, and what is not (2)

With a few exceptions, 26 percent or less of the managers judged the characteristics as only descriptive of average or outstanding managers (i.e., responding by circling only average or outstanding) without also stating that the characteristics were essential for selection and training.

Categorization of Performance Characteristics as Descriptive of Outstanding versus Average Performers

A procedure was devised to combine performance characteristics data into more comparable categories to enable relative comparisons among the various characteristics. The purpose for devising a scoring procedure was to exclude less meaningful responses to a characteristic such as the judgment of "Essential Only," to a characteristic and to include as much data as possible in identifying the response pattern to a characteristic. The forced-choice nature of the inventory allowed the respondent to categorize a characteristic as descriptive of either average or outstanding managers but not both. Therefore, the important response patterns are "Outstanding," "Essential/Outstanding," "Average," and "Essential/Average."

Assigning a Score to Each Characteristic

Each characteristic received two separate scores: an "Outstanding Performer" score (the degree to which a characteristic was perceived to be descriptive of outstanding performers and essential to consider in hiring and training) and an "Average Performer" score (the degree to which a characteristic was descriptive of average performers and essential to consider in hiring and training). A formula was devised for the two judgments within each category. For the "Outstanding Performer" score, the responses of "Outstanding/Essential" and "Outstanding" were combined as follows: (2 x Outstanding) + (1 x Essential). A similar procedure was used to calculate the "Average Performer" score for each characteristic: (2 x Average) + (1 x Essential).

We chose formulas developed by Sheila Huff and her colleagues (Huff & Lard, 1978) in their study of job competencies for human service workers because we used the format of their "Job Competencies Inventory for On-Line Human Service Work" (Huff & Webster, 1979) in creating our Management Performance Characteristics Inventory. In both cases, the response format is forced-choice. For example, if a respondent decides that a characteristic is not relevant, he or she crosses it out and moves on to the next statement. Other formulas devised by McBer and Company are more appropriate for multiple response patterns where, for example, the responder can identify a characteristic as essential for selection and training, characteristic of outstanding performance, and not obtained in the general population (our "Not Relevant" category). Therefore, we do not include directly the "Not Relevant" category into the formula. Rather, it is included indirectly in that characteristics with high numbers of responses in the "Not Relevant" category have lower "Outstanding Performer" and "Average Performer" scores than characteristics with few responses in this category.

Using these formulas, each characteristic received an "Outstanding Performer" and "Average Performer" score which is a sum of the results of the above formula across all respondents. The "Outstanding Performer" scores ranged from a high of 163 to a low of 8. The range for the "Average Performer" scores was 180 to 36.

Rank Ordering the Characteristics

The performance characteristics were then rank ordered. Categories were established by splitting the "Outstanding Performer" and "Average Performer" scores at the median, 84 for the "Outstanding Performer" scores and 100 for the "Average Performer" scores. In both cases the median scores are also the average scores. Four categories of characteristics were established. The "High Outstanding Performer/High Average Performer" category includes characteristics where both scores are above the median. The "High Outstanding Performer/Low Average Performer" characteristics were perceived as important to outstanding performance and not descriptive of average performance. The "Low Outstanding Performer/High Average Performer" elements were perceived as more descriptive of average performance in comparison to outstanding. Characteristics in the "Low Outstanding Performer/Low Average Performer" category are descriptive of neither outstanding nor average performers. Table 12 presents all characteristics in the MPCI in one of these four categories.

Characteristics Descriptive of Both Average and Outstanding Performers

The first category includes characteristics perceived by managers responding to the inventory as descriptive of both average and outstanding managers. The characteristics in this category did not receive a consensus on whether they are descriptive of an average or an outstanding performer. Fifteen percent (n = 24) of the characteristics fell into this category.

Characteristics Descriptive of Outstanding Performers

The second group of characteristics are those that received a "High Outstanding Performer" score and a "Low Average Performer" score. These characteristics are perceived as mostly descriptive of outstanding performers. Many of those that received the highest "Outstanding Performer" score deal with difficult situations: addressing conflict directly and tactfully; making decisions under conditions of risk; maintaining objectivity under stressful conditions; and functioning effectively in the context of conflicting information, to name a few. Another focus is on people management skills such as inspiring, promoting, motivating others, taking charge quickly, organizing time effectively, and other aspects of task management. Thirty-seven percent of the characteristics (n = 59) fell into this category.

Characteristics Descriptive of Average Performers

A third group of characteristics received a "High Average Performer/Low Outstanding Performer" score. These are descriptive of average performers. They are ones managers are expected to have, such as technical skills, trustworthiness, intelligence, maturity, respect for authority and other assumed characteristics (self-confidence, common sense). In all, 34 percent of the characteristics fell into this category (n = 55). Characteristics in this category seem to represent most of the basic requirements for being a manager.

Table 12

Analysis of the Responses of 78 Women Managers and Executives to 160 Management Performance Characteristics in Relation to Relevance to Management, Essential for Hiring and Training, and Descriptive of Average or Outstanding Performers

Management Performance Characteristic	Descriptive of Outstanding Performers	Descriptive of Average Performers	Competence
Characteristics rated as descriptive of both Outstanding and Average Performers*			
Ability to identify and evaluate alternatives in solving problems	116	102	
Ability to exercise leadership skills	111	100	Management of Groups
Ability to make decisions in the face of several alternatives	110	105	Proactivity
Initiative, self-motivation	107	113	Proactivity
Ability to influence others	107	101	Use of Socialized Power
Ability to provide appropriate feedback to subordinates, peers, and superiors	106	113	Development of Others (2) **
Ability to work effectively with the management chain (up and down) to resolve problems or contentions	105	113	Use of Socialized Power (3)
Ability to assert authority, exercise leadership	104	104	Use of Unilateral Power (1)
Ability to allocate work with a sensitivity to group cooperation and productivity	101	105	
Ability to reassess priorities	100	107	
Ability to negotiate decisions with a variety of others	99	120	
Flexibility, adaptability	98	120	Stamina and Adaptability
Ability to balance personal responsibility against the need for delegation	98	108	
Orientation toward results	91	113	
Ability to develop and document viable alternative courses of action	90	112	

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*Ranked according to Outstanding Performer Score.

**Subcompetence

Table 12 continued

Management Performance Characteristic	Descriptive of Outstanding Performers	Descriptive of Average Performers	Competence
...both Outstanding and Average performer (continued)			
Effective knowledge of communications skills	89	120	
Knowledge of the organizational system's operations as a whole	88	120	
Ability to defend decisions	88	102	
Ability to interpret effectively	87	121	Conceptualization
Ability to prioritize	86	127	
Ability to observe accurately	85	119	Conceptualization
Ability to discriminate regarding what and when to delegate	85	118	
Ability to promote cooperation	84	117	Management of Groups
Ability to relate data to problem-solving activity	84	111	Conceptualization
Characteristics rated as descriptive of Outstanding performers only*			
Ability to address conflict directly and tactfully	163	51	Perceptual Objectivity
Ability to make decisions under conditions of risk	163	43	Proactivity (4)
Ability to maintain objectivity under stressful conditions	159	51	Stamina and Adaptability (2)
Creativity	159	46	
Ability to present a clear position and press for a decision when required	158	57	
Ability to function effectively in a context of conflicting information	143	49	
Ability to inspire others	139	63	
Willingness to consider interests and objectives of other parts of the organization in developing plans and actions	138	66	

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*Ranked according to Outstanding Performer Score.

Table 12 continued

Management Performance Characteristic	Descriptive of Outstanding Performers	Descriptive of Average Performers	Competence
...Outstanding performer only (continued)			
Ability to push one's own ideas forward despite opposition	137	45	
Willingness to promote development of subordinates	136	71	Development of Others
Ability to take charge quickly	136	71	Proactivity
Ability to organize time effectively	133	92	Efficiency Orientation (4)
Ability to motivate others	133	79	Expressed Concern with Impact (1)
Ability to organize unstructured situations and see the implications of that organization	131	53	Diagnostic Use of Concepts
Ability to function effectively in a context of conflicting expectations	131	52	
Ability to anticipate the future	130	60	
Ability to self-assess accurately	128	61	Accurate Self-Assessment (1)
Ability to separate significant from insignificant elements in complex situations	127	70	Diagnostic Use of Concepts (4)
Ability to exercise power effectively	127	62	Use of Socialized Power
Ability to identify inconsistencies, subtle relationships in information	126	54	Diagnostic Use of Concepts
Ability to deal with concepts as well as facts	124	83	Conceptualization
Ability to manage external pressures and influence effectively	124	72	Stamina and Adaptability
Ability to admit errors in decision-making	124	65	Accurate Self-Assessment
Ability to judge trends effectively	124	56	
A high need for achievement	123	47	Efficiency Orientation
High capacity for work	122	65	Stamina and Adaptability

Table 12 continued

Management Performance Characteristic	Descriptive of Outstanding Performers	Descriptive of Average Performers	Competence
...Oustanding performer only (continued)			
Ability to distinguish between what is important, or controllable, and what is not	121	92	Diagnostic Use of Concepts (4)
Ability to conceptualize	120	80	Conceptualization
Ability to predict outcome or impact	120	69	
Ability to listen critically	119	76	
Ability to take decisive, firm positions	118	88	
Strategic contacts in the management system	117	53	Use of Socialized Power (1)
Ability to cope with change or setbacks	116	97	Stamina and Adaptability
Ability to coordinate multiple organization levels	116	65	Use of Socialized Power
Ability to adapt one's communication style to the audience	116	65	
Ability to successfully alter intended courses of action, if necessary	113	92	Proactivity (1)
Ability to balance long-range against short-range goals	113	84	
Ability to recognize opportunities when available	112	62	Proactivity (1)
Ability to negotiate viable alternative courses of action	111	94	
Ability to persuade others	111	91	
Ability to relate facts from diverse sources to yield conclusions	111	89	Conceptualization
Stamina, persistence	111	84	Stamina and Adaptability
Ability to manipulate others through interpersonal skills	109	48	Use of Socialized Power
Ability to develop alternatives	107	97	

Table 12 continued

Management *Performance* Characteristic	Descriptive of Outstanding Performers	Descriptive of Average Performers	Competence
...Outstanding performer only (continued)			
Ability to use feedback and feedback opportunities constructively	106	97	Development of Others (2)
Ability to recognize change and modify behavior accordingly	105	99	Stamina and Adaptability
Ability to work toward long-range outcomes	105	94	
Ambition, a desire to succeed	104	87	Expressed Concern with Impact
Ability to know when to respond to interpersonal cues	104	71	
Ability to negotiate individual interests to create a result satisfactory to all	104	68	Use of Socialized Power (3)
Ability to deal effectively with the discrepancy between the "real" and the "ideal"	97	84	
Ability to build coalitions to accomplish tasks	97	74	Use of Socialized Power (1)
Ability to make decisions that will improve the general status of the company	95	84	
Ability to balance expedient against humanistic goals	94	77	
Ability to act as a model for desirable behavior as a way of influencing outcomes	93	71	Use of Socialized Power (2)
Ability to conceptualize the "real" versus the "ideal"	90	87	Diagnostic Use of Concepts
Ability to make decisions which cause no one loss of face	90	36	Use of Socialized Power (3)
Aggressiveness	84	70	
A definite sense of one's career path	84	65	

Table 12 continued

Management Performance Characteristic	Descriptive of Outstanding Performers	Descriptive of Average Performers	Competence
Characteristics rated as descriptive of Average performers only*			
Ability to carry out directives from above appropriately	24	180	
Relevant technical skills	23	178	Specialized Knowledge
Trustworthiness	36	169	
Intelligence	46	164	Logical Thought
Reliability, consistency	42	164	
Maturity	40	162	
Ability to allocate work realistically	33	162	Efficiency Orientation (4)
Ability to use available technical knowledge in making decisions	25	160	
Respect for authority	14	157	
Willingness to revise plans when necessary	50	156	
Accountability for decisions	64	155	
Ability to think logically	62	152	Logical Thought
Ability to provide technical information to subordinates, peers, and superiors	29	152	
Willingness to be a team player	56	151	Management of Groups (1)
Ability to interpret data	53	151	Diagnostic Use of Concepts (1)
Ability to match resources to tasks	43	150	Efficiency Orientation (4)
Ability to measure progress	40	149	
Common sense	70	148	
Ability to ensure that practical constraints are considered in decision-making	46	148	Efficiency Orientation (4)
Ability to act as a representative of the company	39	148	Expressed Concern with Impact (2)

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*Ranked according to Average Performer Score.

Table 12 continued

Management Performance Characteristic	Descriptive of Outstanding Performers	Descriptive of Average Performers	Competence
...Average performer only (continued)			
Ability to plan, document, and track the progress of programs	58	147	
Ability to formulate plans to achieve job objectives	70	145	
Ability to keep proper communication channels open	65	145	Use of Socialized Power (1)
Self-confidence	64	145	
Ability to monitor the activities of others to gain needed information	50	142	
A belief in people	46	142	Positive Regard
Ability to provide appropriate resources so that the work may go on	38	142	
Ability to set limits for subordinates	23	141	Development of Others (6)
Ability to form relationships	21	141	
Ability to perform under less than optimum conditions	64	136	Stamina and Adaptability
Ability to empathize	54	134	Perceptual Objectivity
Self-control	73	133	Self-Control
Concern for public image of the company or product	52	132	Expressed Concern with Impact (2)
Ability to balance customer or client demands against company needs	32	131	
A primary loyalty to the employer or company	36	130	
Ability to formulate realistic plans and goals	83	129	Efficiency Orientation (1)
Willingness to seek information from a variety of sources	68	129	Proactivity (5)
Ability to evaluate outcomes	63	129	Diagnostic Use of Concepts
Sustained belief in one's own work as valuable	67	128	

Table 12 continued

Management Performance Characteristic	Descriptive of Outstanding Performers	Descriptive of Average Performers	Competence
...Average performer only (continued)			
Willingness to disseminate information to subordinates	82	126	Development of Others (5)
Ability to delegate authority appropriately	81	126	Development of Others
Orientation to action, not a dreamer	58	126	
Ability to give orders and directions unilaterally	57	125	Use of Unilateral Power (1)
Ability to adapt to norms of varying situations	43	125	Stamina and Adaptability
Concern with the work of subordinates in terms of overall trends, processes, and resources	63	124	
Concern for the self-image one projects to others	41	124	Expressed Concern with Impact (1)
Ability to write well	72	121	
Enthusiasm	82	118	
Ability to speak well	80	118	
Ability to design and monitor control systems	52	115	
Good memory	60	113	
Managerial experience	36	112	
Ability to maintain consistent expectations	57	110	
Ability to ensure that personnel and positions are properly matched	83	106	Efficiency Orientation (4)
Ability to perceive when the company's goals and one's own goals mesh	67	105	

Table 12 continued

Management Performance Characteristic	Descriptive of Outstanding Performers	Descriptive of Average Performers	Competence
Characteristics rated as descriptive of neither Outstanding nor Average performers *			
Willingness to continue one's education	60	95	
Ability to balance customer or client demands against company loyalty	54	94	Accurate Self-Assessment (1)
Ability to identify recurrent patterns in relationships	69	92	
Ability to put limits on affiliation in the interest of the task	51	89	Conceptualization (1)
Ability to synthesize	76	87	Conceptualization
Strong sense of identity	77	86	
Ability to balance company loyalty against family loyalty	39	86	
Willingness to promote one's own accomplishments	38	85	
Ability to apply explicit frameworks or theories to interpret events	62	78	Diagnostic Use of Concepts (1)
Spontaneity	79	77	Spontaneity
A conforming personality	8	76	
Ability to use sanctions effectively	69	75	Use of Unilateral Power (1)
Ability to relate to the community in ways relevant to the company	53	73	
Ability to avoid failure situations	57	72	
High visibility to peers and superiors	83	69	
Sponsorship within the organization	59	66	
Strong need for affiliation	9	64	Concern with Affiliation
Ability to confine decision-making to the "operating" level	17	62	
Ability to create symbols of group identity	60	56	Management of Groups (3)

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*Ranked according to Average Performer Score.

Table 12 continued

Management Performance Characteristic	Descriptive of Outstanding Performers	Descriptive of Average Performers	Competence
...either Outstanding or Average performer (continued)			
Luck (being in the right place at the right time)	29	55	
Ability to manipulate the system	77	39	Use of Socialized Power
A drive for prestige, mobility	46	36	Expressed Concern with Impact (2)

Characteristics Descriptive of Neither Outstanding Nor Average Performers

The fourth group of characteristics received a "Low Outstanding Performer/ Low Average Performer" score. Respondents perceived these characteristics as descriptive of neither outstanding nor average performers. This category includes a variety of characteristics, such as spontaneity, ability to synthesize or avoid failure situations, willingness to continue one's education, luck, or a conforming personality. Fourteen percent (n = 22) of the characteristics are listed here.

This analysis defines managers' perceptions of the essential and not so essential characteristics of management performance, and provides a vehicle for comparing the characteristics on their relative importance to outstanding and average performance.

Relationships Between Perceptions of Performance Characteristics and Performance of Competences

Relating Performance Characteristics and Competences

Coding Characteristics by Competences

Another objective of this study is to examine the relationship between perceptions and performance. To compare managers' perceptions and performance, we first developed a comparable data base. Two members of the Management Research Team who are also faculty in the Management Department coded the management performance characteristics from the MPCI according to the McBer Coding Manual (see Table 12). They were familiar with the coding manual because they were assessors for coding the Behavioral Event Interview Writeups. Characteristics were coded independently by each assessor, who categorized each characteristic by the subcompetence which best described it, or by the competence if the characteristic was generally but not specifically related to the competence. After the two independent codings were complete, the two were compared and combined. In cases where the two assessors disagreed, the characteristic was not included. If both assessors coded a characteristic on multiple competences, the competence they agreed upon became the final code. A total of 88 of the 160 characteristics (55 percent) were easily and unambiguously coded (see Table 12). These 55 percent are included in the following comparison of performance and perceptions. Most performance characteristics were coded by competence rather than subcompetence, and are so reported. Table 13 presents the characteristics according to the competences, and characteristics are presented with their "Outstanding Performer" and "Average

Performer" scores reported as either high (+) or low (-). The proportion of characteristics coded by competence that received a "High Outstanding Performer" score was calculated by summing the number of high scores (+) in the outstanding performer column for each competence and dividing by the number of characteristics categorized by competence. The number of times competences were coded in the Behavioral Event Interview in relation to the number of situations, and the number of managers who demonstrated them in relation to the number of managers, are also included.

Rank Order of Importance of Characteristics and Competences

Table 14 indicates the rank order of both the management performance characteristics coded by competence (ranked by proportion of characteristics descriptive of outstanding performers) in relation to the number of managers demonstrating the competence in the Behavioral Event Interview (ranked by proportion of managers demonstrating each competence). The correlation between the two ranks is significant ($r = .533$, $p < .05$). This indicates that the order of importance of the competences, where the first order is derived from the Management Performance Characteristics Inventory and the second order is derived from the Behavioral Event Interview, is significantly related.

Relating Perceptions of Competences as Descriptive of Outstanding Performers, and Level of Performance of Competences On-the-Job

Tables 15 and 16 more descriptively illustrate the relationship between the perception of the competences as descriptive of outstanding performers and the performance of competences in the Behavioral Event Interview. In the first table (Table 15), perception of characteristics coded by competence and performance of competences was categorized as high or low by using the midpoint of the order in which they are listed in the previous table (see Table 14). These lists are derived from the proportion of characteristics coded by competences (perceptions) and the proportion demonstrated by the managers (performance). In the second table (Table 16), the categories are high, medium and low, with each order of competences split into thirds. (If proportions are used to strictly split the order, Efficiency Orientation moves from the medium perceptions/medium performance category to the medium perceptions/high performance category.)

The clearest picture from these tables, where perceptions are seen in relation to performance, is that competences more highly descriptive of outstanding performers are likely to have been demonstrated by a larger proportion of managers in the sample, and competences less highly descriptive of outstanding performers are less likely to have been demonstrated by the smaller proportion of managers in the sample.

Table 13

Categorization of Management Performance Characteristics by Competences Relative to Performance in the Behavioral Event Interview

Categorization of Performance Characteristics by Competences	Descriptive of Outstanding Performer	Descriptive of Average Performer	p[2]	Number of Times Competence Was Coded	p[3]	Number of Managers Performing the Competence	p[4]
SELF-CONTROL			.00	34	.06	27	.27
Self-Control	-	+[1]					
SPONTANIETY			.00	9	.02	8	.08
Spontaniety	-	-					
PERCEPTUAL OBJECTIVITY			.50	52	.10	39	.39
Ability to address conflict directly, tactfully	+	-					
Ability to empathize	-	+					
ACCURATE SELF-ASSESSMENT			.66	125	.24	65	.64
Ability to self-assess accurately	+	-					
Ability to admit errors in decision-making	+	-					
Willing to continue one's education	-	-					
STAMINA AND ADAPTABILITY			.78	13	.02	13	.13
Flexibility, adaptability	+	+					
Ability to maintain objectivity under stressful conditions	+	-					
Ability to manage external pressure and influence effectively	+	-					
High capacity for work	+	-					
Ability to cope with change or setbacks	+	-					
Stamina, persistence	+	-					
Ability to recognize change and modify behavior accordingly	+	-					
Ability to perform under less than optimum conditions	-	+					

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[1] A minus sign indicates a low score and a plus sign indicates a high score for the characteristic; so a plus is "yes" and a minus is "no".

[2] Proportion of characteristics coded by competence that received a high outstanding performer score.

[3] Proportion of competences in relation to the total number of critical incidents.

[4] Proportion of managers in relation to total number of managers.

Table 13 continued

Categorization of Performance Characteristics by Competences	Descriptive of Outstanding Performer	Descriptive of Average Performer	p^2	Number of Times Competence Was Coded	p^3	Number of Managers Performing the Competence	p^4
Ability to adapt to norms of varying situations	-	+					
EFFICIENCY ORIENTATION			.29	125	.24	58	.57
Ability to organize time effectively	+	-					
A high need for achievement	+	-					
Ability to allocate work realistically	-	+					
Ability to match resources to tasks	-	+					
Ability to ensure that practical constraints are considered in decision-making	-	+					
Ability to formulate realistic plans and goals	-	+					
Ability to ensure that personnel and positions are properly matched	-	+					
PROACTIVITY			.86	311	.60	92	.91
Initiative, self-motivation	+	+					
Ability to make decisions in the face of several alternatives	+	+					
Ability to make decisions under con conditions of risk	+	-					
Ability to take charge quickly	+	-					
Ability to successfully alter intended courses of action, if necessary	+	-					
Ability to recognize opportunities when available	+	-					
Willingness to seek information from a variety of sources	-	+					

Table 13 continued

Categorization of Performance Characteristics by Competences	Descriptive of Outstanding Performer	Descriptive of Average Performer	p^2	Number of Times Competence Was Coded	p^3	Number of Managers Performing the Competence	p^4
LOGICAL THOUGHT			.00	18	.03	14	.14
Intelligence	-	+					
Ability to think logically	-	+					
CONCEPTUALIZATION			.78	95	.18	59	.58
Ability to interpret effectively	+	+					
Ability to observe accurately	+	+					
Ability to relate data to problem-solving activity	+	+					
Ability to deal with concepts as	+	-					
well as facts	+	-					
Ability to conceptualize	+	-					
Ability to relate facts from diverse sources to yield conclusions	+	-					
Ability to identify recurrent patterns in relationships	-	-					
Ability to synthesize	-	-					
DIAGNOSTIC USE OF CONCEPTS			.63	298	.57	94	.93
Ability to organize unstructured situations and see the implications of that organization	+	-					
Ability to separate significant from insignificant elements in complex situations	+	-					
Ability to identify inconsistencies, subtle relationships in information	+	-					
Ability to distinguish between what is important, or controllable, and what is not	+	-					
Ability to conceptualize the "real" versus the "ideal"	+	-					
Ability to interpret data	-	+					
Ability to evaluate outcomes	-	+					
Ability to apply explicit frameworks or theories to interpret events	-	-					

Table 13 continued

Categorization of Performance Characteristics by Competences	Descriptive of Outstanding Performer	Descriptive of Average Performer	p^2	Number of Times Competence Was Coded	p^3	Number of Managers Performing the Competence	p^4
SPECIALIZED KNOWLEDGE			.00	6	.01	5	.05
Relevant technical skills	-	+					
DEVELOPMENT OF OTHERS			.50	182	.35	70	.69
Ability to provide appropriate feedback to subordinates, peers, and superiors	+	+					
Willingness to promote development of subordinates	+	-					
Ability to use feedback and feedback opportunities constructively	+	-					
Ability to set limits for subordinates	-	+					
Willingness to disseminate information to subordinates	-	+					
Ability to delegate authority properly	-	+					
EXPRESSED CONCERN WITH IMPACT			.33	121	.23	63	.62
Ability to motivate others	+	-					
Ambition, a desire to succeed	+	-					
Ability to act as a representative of the company	-	+					
Concern for the public image of the company or product	-	+					
Concern for public image of the to others	-	+					
A drive for prestige, mobility	-	-					
USE OF UNILATERAL POWER			.33	49	.09	39	.39
Ability to assert authority, exercise leadership	+	+					
Ability to give orders and directions unilaterally	-	+					
Ability to use sanctions effectively	-	-					

Table 13 continued

Categorization of Performance Characteristics by Competences	Descriptive of Outstanding Performer	Descriptive of Average Performer	p^2	Number of Times Competence Was Coded	p^3	Number of Managers Performing the Competence	p^4
USE OF SOCIALIZED POWER			.83	20	.04	14	.14
Ability to work effectively with the management chain (up and down) to resolve problems or contentions	+	+					
Ability to influence others	+	+					
Ability to exercise power effectively	+	-					
Strategic contacts in the management system	+	-					
Ability to coordinate multiple organization levels	+	-					
Ability to manipulate others through interpersonal skills	+	-					
Ability to negotiate individual interests to create a result satisfactory to all	+	-					
Ability to build coalitions to accomplish tasks	+	-					
Ability to act as a model for desirable behavior as a way of influencing outcomes	+	-					
Ability to make decisions which cause no one loss of face	+	-					
Ability to keep proper communications channels open	-	+					
Ability to manipulate the system	-	-					
CONCERN WITH AFFILIATION			.00	5	.01	5	.05
Strong need for affiliation	-	-					
POSITIVE REGARD			.00	26	.05	23	.23
A belief in people	-	+					

Table 13 continued

Categorization of Performance Characteristics by Competences	Descriptive of Outstanding Performer	Descriptive of Average Performer	p^2	Number of Times Competence Was Coded	p^3	Number of Managers Performing the Competence	p^4
MANAGEMENT OF GROUPS			.50	28	.05	23	.23
Ability to promote cooperation	+	+					
Ability to exercise leadership skills	+	+					
Willingness to be a team player	-	+					
Ability to create symbols of group identity	-	-					

Table 14

Management Performance Characteristics Coded by Competence, Rank Ordered by Proportion of Characteristics Descriptive of Outstanding Performers and Related to the Rank Order of Managers Performing the Competence in the Behavioral Event Interview

Management Performance Characteristics Coded by Competence	p	Managers Performing the Competence in the Behavioral Event Interview	p
Proactivity	.86	Diagnostic Use of Concepts	.93
Use of Socialized Power	.83	Proactivity	.91
Stamina and Adaptability	.78	Development of Others	.69
Conceptualization	.78	Accurate Self-Assessment	.64
Accurate Self-Assessment	.66	Expressed Concern with Impact	.62
Diagnostic Use of Concepts	.63	Conceptualization	.58
Perceptual Objectivity	.50	Efficiency Orientation	.57
Development of Others	.50	Perceptual Objectivity	.39
Management of Groups	.50	Use of Unilateral Power	.39
Expressed Concern with Impact	.33	Self-Control	.27
Use of Unilateral Power	.33	Positive Regard	.23
Efficiency Orientation	.29	Management of Groups	.23
Self-Control	.00	Logical Thought	.14
Spontaneity	.00	Use of Socialized Power	.14
Logical Thought	.00	Stamina and Adaptability	.13
Specialized Knowledge	.00	Spontaneity	.08
Concern with Affiliation	.00	Specialized Knowledge	.05
Positive Regard	.00	Concern with Affiliation	.05

Table 15

Perceptions and Performance Compared on Two Categories, High/Low

	PERCEPTIONS[1]	
PERFORMANCE[2]	HIGH	LOW
HIGH	[3] Proactivity Conceptualization Accurate Self-Assessment Diagnostic Use of Concepts Perceptual Objectivity Development of Others	Expressed Concern with Impact Impact Use of Unilateral Power Efficiency Orientation
LOW	Management of Groups Use of Socialized Power Stamina and Adaptability	Self-Control Spontaneity Logical Thought Specialized Knowledge Concern with Affiliation Positive Regard

Note:

[1] Proportion of characteristics coded by competence perceived as descriptive of outstanding performers.

[2] Proportion of managers demonstrating the competences.

[3] Ordered by outstanding performer proportion within each category.

Which competences identified as highly descriptive of outstanding performers are demonstrated relatively infrequently by managers? Table 16 illustrates the relationship more clearly.

Two competences, Use of Socialized Power and Stamina and Adaptability are perceived as highly descriptive of outstanding performers, but are demonstrated by relatively few of the managers. Interpretation of such findings are difficult. Are these competences highly important to effective performance, and only the most outstanding managers demonstrate them, which accounts for their low incidence in the Behavioral Event Interview? Or is it that they are perceived as very important to outstanding performance, but are not really that critical to effective performance in situations managers choose to describe? Development of Others and Expressed Concern with Impact (medium perception/high performance) and Self-Control and Positive Regard (low perception/medium performance) are also discrepant. Perhaps our analysis of the relationships between careering and professional development variables and effective performance will give us an indication of the extent to which these "discrepant" competences are descriptive of more outstanding performers. With that information, we can return to this table for a more adequate interpretation. However, the clearest finding is that the more descriptive of outstanding performers the competence was perceived to be, the more likely the competence was performed by the managers in the sample. There seems to be a relationship between the perceptions of women managers and their performance, at least if one compares them as a group.

Description of Organizations and the Careering, Professional Development, Personal Roles, and Socialization of Women Managers and Executives

A competence model for managerial performance needs additional input from other characteristics of managers and executives. But characteristics of women managers as a professional group can be expected to change, so the contribution of our sample of managers and executives to this effort is only a first step. Consequently, it is important to carefully describe the sample of women managers and executives in the current study. This description provides the reader with an overall sense of the context in which the women work. It informs us on how they might be characterized on certain commonly understood variables, enables more accurate generalization of the results, and comparison with results from other studies. The sample description creates a picture for the reader of women managers and executives. It creates a context for interpreting results from the major research objectives. The data source is the Management Careering Questionnaire. Since variables described here are later used to examine careering and professional development and are selectively related to managerial performance, all information from the Management Careering Questionnaire is presented.

Table 16

Perceptions and Performance Compared on Three Categories, High/Medium/Low

	PERCEPTIONS[1]		
PERFORMANCE[2]	HIGH	MEDIUM	LOW
HIGH	[3] Proactivity Conceptualization Accurate Self-Assessment Diagnostic Use of Concepts	Development of Others Expressed Concern with Impact	
MEDIUM		Perceptual Objectivity Management of Groups Use of Unilateral Power Efficiency Orientation	Self-Control Positive Regard
LOW	Use of Socialized Power Stamina and Adaptability		Spontaneity Logical Thought Specialized Knowledge Concern with Affiliation

Note:

[1] Proportion of characteristics coded by competence perceived as descriptive of outstanding performance.

[2] Proportion of managers demonstrating the competences.

[3] Ordered by outstanding performer proportion within each category.

Fifty-five organizations were contacted and 53 agreed to participate. Of 146 women managers named, 110 met the criteria for manager. Of 110 managers contacted, 103 agreed to be interviewed. Two interviews were not codable and were dropped for purposes of data analysis, for a total sample of 101 women managers and executives (see Tables 17 and 18).

Questionnaire Data Categorized as Variables or Sample Descriptors

Our first step is to examine each piece of information collected on the manager and her organization for its range and variability to determine if the information may be used as a variable in the data analysis, or if we will use it as a sample descriptor alone. Table 19 lists the general categories of variables: Organization, Careering, Professional Development, Personal Roles, and Socialization. Within each set, we list the more specific variables (e.g., Setting/Opportunity, Position, Experience). Within each category, information collected on the paticipants is listed under "variable" or "descriptor." Results from each of the variables or descriptors are then presented within each category. Interrelationships between the variables in each category and their interpretation is presented at the end of the category.

Organization

With one exception, all women managers were employed in private sector corporations that operate to make a profit. To further clarify the work setting of the managers, we collected information on the size of organizations and type of industry where women managers and executives were identified as persons we should include in the study.

Three sources were used to classify the employing organizations according to size and type of industry. The "Classified Directory of Wisconsin Manufacturers" (Wisconsin Manufacturers and Commerce, 1975) and the "Economic Fact Book on Metropolitan Milwaukee" (Metropolitan Association of Commerce, 1980) included most of the employing organizations. In the latter publication, which included most of the employers, companies were classified by general product line, type of business (e.g., manufacturing, service, retail, wholesale), and size (less than 300 employees, 300 to 899 employees, 900 to 1999 employees, and 2000 and over employees). In cases where an organization was not included in the publication, information was obtained directly from a company. Organizations were then classified by industry according to Standard and Poor's industrial classification system (Standard and Poor's Corporation, 1972) to yield five categories (Manufacturing, Transportation/Communication/Utilities, Wholesale/Retail, Finance/Insurance, and Service).

Table 17

Women Managers and Executives Identified and Participating in the Study

	Identified	Participated	Refused	Did not meet Criteria
Managers and Executives	146	103	7	36
Organizations	55	53	2	--

Table 18

Categorization of Women Managers and Executives on Position at Initial Contact

Position	Participated
Managers	90
Executives	11
Interviews Not Codable	2
	103

Table 19

Information on Organization, Careering, Professional Development, Personal Roles and Socialization of Women Managers and Executives Categorized as Variables or Descriptors for Data Analysis

Category of Information		Variable	Descriptor
ORGANIZATION	Setting/ Opportunity:	Size of Organization Type of Industry	Private, profit making
	Support at Work:	Number of Women Manager Colleagues in Organization	
CAREERING	Age:	Years Old	
	Position:	Level (Upper/ Middle/Lower) Type (Staff/Line)	Number of Supervisees
	Experience:	Years in Current Position Prior Years with Organization Number of Prior Positions in the Organization Management Position in Previous Organization	Type of Prior Positions in the Organization Time in Prior Positions Years of experience in Management Jobs Type/length of experience in Prior Nonmanagement Positions
	Advancement:	Number of Positions Held in the Organization by Years per Position	
	Success:	Percent Salary Increase Expectation of Promotion	
	Satisfaction:	Satisfaction with Management as a Career	

Table 19 continued

	Opportunity for Careering/ Education Needed		Perceptions of Opportunity in Management, and Education Needed
PROFESSIONAL DEVELOPMENT	Education:	Level of Education Completed	Degree Currently Held, Year Degree Granted
		Currently Enrolled in Degree Program	Name of Educational Institution Degree Working Toward
		Area of Specialization Completed/ Enrolled	Name of College Years of Formal Education
		Level of Education Completed/ Enrolled	
		Completed Management Training Program	Type of Management Training Program Year Program Completed
	Professional Activities:	Number of Professional Activities	
		Breadth of Professional Activities	
PERSONAL ROLES	Multiple Roles:	Marital Status	
		Children (some/ none)	Number of Children
		Number of Roles	
	Support at Home:	Spouse's Occupational Status	Types of Occupations
SOCIALIZATION	Occupational Mobility/ Career Modeling:	Mother Employed	
		Mother's and Father's Occupational Status	Types of Occupations
	Expectations for Achieving:	Birth Order	Number of Siblings

Table 20 presents information on the number of organizations participating by size and type of industry. Of 55 organizations named, 53 organizations participated: 34 percent in manufacturing, 9 percent in transportation/ communication/ utilities, 8 percent in wholesale/retail, 23 percent in finance/ insurance and 27 percent in service. Of the 13 (25 percent) large organizations (2000 or more employees), 10 (77 percent) are in the manufacturing industry. Of the 22 (42 percent) organizations employing less than 300 people, 12 (55 percent) are in the service industry. Forty-two percent of the organizations participating are small (less than 300 employees), 26 percent have 300 to 899 employees, 8 percent have 900 to 1999 employees and 25 percent have 2000 or more employees.

Organizations by Size and Type of Industry

Five types of industries participated in this study. Twenty-seven percent of the managers worked in the manufacturing industry, compared to nine percent in transportation/communication/utilities. Nine percent of the managers were employed by the wholesale/retail industry, 41 percent by finance/insurance, and 15 percent by service industries.

Managers by Size and Type of Industry

Table 21 presents information on number of managers employed in the organizations participating by size and type of organization. The two categories of organizations where the highest number of managers in our sample were named are large companies (2000 or more employees) in manufacturing (15 percent of the managers) and finance/insurance industries (22 percent of the managers. Our sample is also well represented in medium size (300 to 899 employees) finance/insurance companies (12 percent of the managers) and in small (less than 300 employees) service companies (13 percent of the managers). In all, 26 percent of the managers are employed by companies with less than 300 people, 25 percent are from companies with 300 to 899 employees, eight percent are employed by organizations with 900 to 1999 workers, and 42 percent are employed in large organizations with 2000 or more employees. Clearly, there are more women in large organizations in Manufacturing and Insurance/Finance ($\underline{x}2 = 52.09$, $12\underline{df}$, $\underline{p} < .001$).

Women Manager Colleagues in the Organization

The sampling procedure described in the Method section involved nominations of women managers by selected members of the

Table 20

Number of Organizations by Size and Type of Industry

Size of Organization	Manufacturing		Transportation, Communication and Utilities		Wholesale/ Retail		Finance/ Insurance		Service		Total	
	n	Percent	n	Percent	n	Percent	n	Percent	n	Percent	n	Percent
Less than 300 employees	4	18.2	3	13.6	1	4.5	2	9.0	12	54.5	22	41.5
300-899 employees	3	21.4	0	0	3	21.4	6	42.9	2	14.3	14	26.4
900-1999 employees	1	25.0	1	25.0	0	0	2	25.0	0	0	4	7.5
2000 or more employees	10	76.9	1	7.7	0	0	2	15.4	0	0	13	24.5
Total	18	34.0	5	9.4	4	7.5	12	22.6	14	26.8	53	99.9

Table 21

Number of Managers by Size and Type of Industry

	Manufacturing		Transportation, Communication and Utilities		Wholesale/ Retail		Finance/ Insurance		Service		Total	
Size of Organization	n	Percent	n	Percent	n	Percent	n	Percent	n	Percent	n	Percent
Less than 300 employees	5	4.9	3	3.0	2	2.0	3	3.0	13	12.9	26	25.7
300-899 employees	6	5.9	0	0	5	4.9	12	11.9	2	2.0	25	24.8
900-1999 employees	1	1.0	1	1.0	2	2.0	4	4.0	0	0	8	7.9
2000 or more employees	15	14.9	5	4.9	0	0	22	21.8	0	0	42	41.6
Total	27	26.7	9	8.9	9	8.9	41	40.6	15	14.8	101	100.0

business community including women colleagues who were members in women's professional organizations. Women managers who participated in the study were asked to nominate other managers, and managers within the same organization who were named were almost always part of our original list.

We can thus infer that women nominated by persons outside their organization are known in the city's business network. Women who nominated other women within their organization were aware of their female colleagues within the organization at the very least, and were potentially part *of a women's support system* within the organization. If the interviewee was unable to name other women managers within her organization, we can infer that she is in a relatively isolated position as a female manager in her organization, and perhaps even a "token" or the only woman manager. This is somewhat qualified by the fact that a few managers were hesitant to name other women without their prior consent.

The interviewer reported that about 30 managers within the large organizations discussed "networking" and commented they are participating in informal women's groups within their own company to keep each other informed of internal politicking that male counterparts do not reveal to them. About 10 said they were aware of politics but did not feel comfortable "playing politics" and did not see other women doing it well.

The assumption that the more female interviewees in an organization, the greater the women's opportunity for support and networking in that organization, is clearly an inference. Our measure is rather a more general indication of opportunities for support from, and networking with, other women managers at work, and the extent to which the manager is seen as a token by others in the organization.

Table 22 presents the number of women managers we interviewed in the 53 organizations that were part of our sample. In 37 organizations (70 percent) only one woman manager was interviewed, compared to seven organizations where we interviewed two managers and three organizations where three managers were interviewed. Seven managers were interviewed in one organization and sixteen in another. Number of women interviewed per organization is also a function of the size and type of the organization. Women are less likely to have colleagues in service organizations ($\underline{x}2 = 24.21$, 4$\underline{df}$, $\underline{p} < .001$), and as would be expected, and more likely to have colleagues in larger organizations ($\underline{x}2 = 31.13$, 3$\underline{df}$, $\underline{p} < .001$).

Table 23 presents the women managers by the number of colleagues we were able to interview in each organization. Of 37 women, each was the only manager interviewed in the organization. Fourteen managers had at least one female manager colleague and nine managers had at least two female colleagues. In the organizations where we interviewed 16 managers, each manager had 15 female peers. For comparison purposes, the managers were divided into two groups: 51 managers with zero or one female manager peer in the organization; and 50 managers with two or more female peers in the organization.

Table 22

Number of Women Managers Interviewed in Each Organization by Number of Organizations Participating

Number of Women Managers Interviewed in Each Organization	Number of Organizations	
	n	Percent
One	37	69.8
Two	7	13.2
Three	3	5.6
Four	2	3.8
Five	2	3.8
Seven	1	1.9
Sixteen	1	1.9
Total	53	100.0

Table 23

Number of Women Managers by Number of Colleagues Interviewed in the Organization

Number of Other Interviewees within an Organization	Number of Managers	
	n	Percent
None	37	36.6
One	14	13.9
Two	9	8.9
Three	8	7.9
Four	10	9.9
Six	7	6.9
Fifteen	16	15.9
Total	101	100.0

Careering

Age

Age distribution for the women managers and executives is presented in Table 24. Ages range from 26 to 66 (SD = 8.53). The average age for the sample is 39; the median age is 37. A majority of the women (54 percent) are between ages 31 and 40; 11 percent are 51 and older and 13 percent are 30 or younger. This reflects the trend over the past 10 to 15 years of increasing career opportunities for women in management since 67 percent are 40 or younger.

Position

The women managers described aspects of their current position in detail. Since the 101 managers were employed in 53 different organizations, we created a scheme for comparing their positions across the 53 organizations by cross-checking the information given by managers with existing examples of organizational hierarchies. A list was made of each manager's title, department, and title of her supervisor. A qualitative analysis was done to create a list of possible titles. (See Table 1 for a list of titles of women participating.) These titles were then compared to a sample of organizational hierarchies (Galbraith, 1971; Harrigan, 1977). Because of the variability in titles across organizations, a hierarchy was chosen to classify the broad position categories: president, level of vice-president; division managers and assistant managers; and department managers and assistant managers. This general classification scheme was chosen as a means of controlling for variability in title use across organizations and industries. The title of a manager's supervisor was used to help determine her level within an organization if it was not clear from the manager's title (e.g., a manager who reported to a vice-president was considered a division manager).

For purposes of data analysis, managers were grouped into three levels. The category of Upper Level Managers includes 28 presidents, vice-presidents, and assistant vice-presidents. The second category, Middle Level Managers, includes 38 division managers and assistant managers. The Lower Level Managers category includes 35 department managers and assistant managers.

Table 26 presents level of position classifications in conjunction with number of years in current position. Fifty-one percent of the managers have been in their positions two years or less, and 22 percent have been in their current positions three to four years and five to ten years, respectively.

Managers were additionally classified as either line or staff managers. Line managers are more directly responsible and accountable for the profits and losses of the company, and work in production, sales or marketing departments. Staff managers are in charge of departments which provide services and support to line managers such as accounting, personnel, public relations

Table 24

Age Distribution for Women Managers

Age	n	Percent
26 to 30	13	12.9
31 to 35	29	28.7
36 to 40	26	25.7
41 to 45	13	12.9
46 to 50	9	8.9
51 to 55	5	5.0
56 to 60	4	3.9
61 to 66	2	2.0

Table 25

Position Classification of Managers and Executives as Upper Level, Middle Level and Lower Level

Level of Position	Total
Upper	
President	9
Senior Vice-President	1
Vice-President	11
Assistant Vice-President	7
Middle	
Division Manager	31
Assistant Division Manager	7
Lower	
Department Manager	31
Assistant Department Manager	4
Total	101

Table 26

Level of Position of Managers and Executives by Number of Years in Current Position

Level of Position	Number of Managers by Years in Current Position				
	1 to 2 years	3 to 4 years	5 to 10 years	11 or more years	Total
Upper					
President	4	1	3	1	9
Senior Vice-President	1	-	-	-	1
Vice-President	3	5	2	1	11
Assistant Vice-President	5	2	-	-	7
Middle					
Division Manager	21	6	3	1	31
Assistant Division Manager	3	-	4	-	7
Lower					
Department Manager	14	7	8	2	31
Assistant Department Manager	1	1	2	-	4
Total	52	22	22	5	101

or advertising. Research has shown that persons in staff positions have less power and status than the typical line manager (Kanter, 1977). Some examples of titles of line managers are: Group Product Manager at a beverage company, Inside Sales Manager at a manufacturing company, and Assistant Vice-President of Lobby Operations in a bank. For staff managers representative titles are Manager of Corporate Skills Training in insurance, Personnel Director in retailing, and Staff Manager of Public Relations for a utility company.

Table 27 presents the classification of women managers by staff or line relative to the level of their position. Twenty-two of the 28 Upper Level Managers (79 percent) were line managers compared to 17 of the 38 Middle Level Managers (45 percent) and 13 of the 35 Lower Level Managers (37 percent). Upper Level Managers are significantly more likely to be in line positions than are managers at Middle and Lower Level positions (*x2* = 11.80, *2df*, *p* < .01). While there seems to be more likelihood of advancement in line than staff positions, this may not necessarily be the case. Rather, women may more likely be in Upper Level line positions in small service organizations, which may be a function of opportunity.

Table 28 presents data on the number of supervisees for each level of manager. The percentages of supervisees is consistent across the three levels of management. The chi-square test for differences in the number of supervisees was not significant (*x2* = 8.47, *df* = 8). In each category, more than 75 percent of the managers have 10 or less supervisees.

Experience

In addition to number of years in current position, managers described their work experience by listing previous positions within the company, including title and length of time in each position. They also listed the last position or activity held prior to joining the organization, and how long they held the position or activity.

We are first interested in how long a manager has been in her current position as an indicator of careering (see Table 29). Fifty-one percent of the sample have been in their current positions for two years or less. Twenty-two percent have been in their positions for three to four years, and another 22 percent, five to nine years. The average number of years in current position was less than four although eight percent of the managers had been in their current positions for 10 to 30 years.

Career history in the organization for women managers varied considerably (see Table 29). For 22 managers, their current position was their first position with the company. Seventeen managers had one previous position with the company, 15 had two, 19 had three, 11 had four and 17 had five previous positions. Number of positions held in the organization is an important indicator of advancement when compared to total number of years the manager has been in the organization.

Table 27

Type of Position of Women Managers and Executives
by Level of Position

	Type of Position					
Level	n	Percent	n	Percent	Total	Percent
	Staff		Line			
Upper Level Managers	6	21.4	22	78.6	28	27.7
Middle Level Managers	21	55.3	17	44.7	38	37.6
Lower Level Managers	22	62.9	13	37.1	35	34.6
Total	49	48.5	52	51.5	101	100.0

Table 28

Number of Supervisees by Level of Position

	Level of Position							
		Upper		Middle		Lower		Total
Supervisees	n	Percent	n	Percent	n	Percent	n	Percent
None	4	14.3	1	2.6	3	8.5	8	7.9
1 to 3	10	35.7	11	29.0	11	31.4	32	31.8
4 to 5	3	10.7	14	36.8	8	22.9	25	25.7
6 to 10	8	28.6	9	23.7	8	22.9	25	25.7
11 to 70	3	10.7	3	7.9	5	14.3	11	10.9
Total	28	27.7	38	37.6	35	35.7	101	100.0

An index was created which provided an average number of years in position by dividing the total number of years with the organization by total number of positions held by the manager in the organization. The average number of years in each position ranged from one to 30 years. For the sample, the average number of years spent in each position was four; the median, two and one half years. Table 29 presents the distribution of the average number of years in each position by total number of positions. Seventy-seven percent of the managers have been in each of their positions an average of four years or less. Sixteen percent have been in each of their positions an average of five to eight years, and seven percent, ten to 30 years. For data analysis purposes, this variable is continuous.

The average number of total years of employment with their organization was 10 years with a range of one to 40 years. The median was nine years. The majority of the sample had been with the company 10 years or less, and 26 percent, 11 to 20 years. About 10 percent had been employed by the same organization for more than 20 years. We were also interested in the extent to which managers had held a position in management in another organization prior to joining the company, or if they were new to management. Thirteen managers came to the field of management as a result of a significant career change. Five had left positions as teachers, which they held from one to seven years. Another five left positions in the medical profession as dental assistants or nurses. The range of years spent in these medical positions was from one to 17 years. Two managers were homemakers and one was a volunteer prior to joining her current company. An additional 19 managers were students prior to entering management. The remaining 69 managers had a position in a management related field prior to joining the organization. Managers varied in total years of work experience in management related positions. Clerical positions in a business environment were considered relevant experience since a person can become familiar with and generally knowledgeable about the workings of an organization and type of industry from that vantage point.

To get an index of management related work experience for each individual, the number of years in all positions with the company (including current position) were summed plus years in the one most previous management related position outside the company. The result was an index of number of years of management related experience for each person. A limitation that exists in this index is that job histories are more complete for persons who have been with the same company for several years. Complete job history data is not available for those managers who are fairly new to the company and have a history of extensive experience elsewhere. As a result, the correlation between years of management related experience and years with the company is .845, and we are using advancement (see below) as our best indicator of experience.

The average number of years of management related work experience for the sample was 12 years, with a range of two to 41 years (SD = 7.03). Fifteen percent of the managers had five or fewer years of experience, and 38 percent had six to 10 years.

Table 29.

Distribution of Average Number of Years in Each Position by Total Number of Positions in the Organization

Average Number of Years in Each Position	Total Number of Positions with the Organization							
	One	Two	Three	Four	Five	Six	Total	
							n	Percent
1	4	3	4	1	3	6	21	20.8
2	7	4	1	8	2	8	30	29.7
3	1	-	1	5	2	2	11	10.9
4	-	5	4	3	3	1	16	15.8
5	3	3	1	1	1	-	9	8.9
6	-	-	2	1	-	-	3	3.0
7	2	-	1	-	-	-	3	3.0
8	-	1	-	-	-	-	1	1.0
-								
10	-	1	-	-	-	-	1	1.0
11	1	-	-	-	-	-	1	1.0
-								
13	-	-	1	-	-	-	1	1.0
14	1	-	-	-	-	-	1	1.0
15	1	-	-	-	-	-	1	1.0
-								
29	1	-	-	-	-	-	1	1.0
30	1	-	-	-	-	-	1	1.0
Total	22 21.8	17 16.8	15 14.8	19 18.8	11 10.9	17 16.8	101	100.0

About 21 percent were in the 11 to 15 year range and 16 percent were in the 16 to 20 year range. Only 10 percent of the managers have more than 20 years of management related work experience.

In sum, managers' and executives' work experience consists of four variables: 1) years in current position; 2) number of prior years with the organization; 3) number of prior positions in the organization, and 4) whether the manager had a management related position prior to joining the organization or is new to management. The first three were combined to create the Advancement variable; the fourth is "Management Position in Previous Organization" and is categorized yes/no.

Advancement

A fifth experience variable was created as an index of advancement. The total number of years with the organization was divided by the number of positions held in the company (see above). This variable includes current and prior positions in the organization. We recognize that some mobility in the organization may be lateral rather than heirarchial, but if these changes in position are not true upward mobility, they probably do represent advancement in range of experience.

Success

Two indicators of success are salary and promotability. Managers estimated their average annual percent salary increase over the last three years. Reported increases ranged from seven to 100 percent. The average salary increase was 16 percent (SD = 4.55). Twenty-six percent of the sample reported salary increases in the seven to 10 percent range; 40 percent in the 11 to 15 percent range; 22 percent in the 16 to 30 percent range; and 7 percent in the 33 to 100 percent range. Figure 9 presents a graph of the average percent salary increase over three years for the managers. A majority of the managers (n = 82) reported salary increases in the 7 to 20 percent range. The average salary increase figure for the sample was 18 percent (SD = 17.07); the median, 13 percent. Five percent of the sample chose not to report a salary increase over the last three years, which confirmed our decision not to ask for salary, a more sensitive figure.

A manager also reported if she expected to be promoted within her company from her present position and when. Fifty-six percent of the managers responded affirmatively and of those, 33 percent expect to be promoted within the next two years. Thirty-one percent did not expect to be promoted and 12 percent were not sure. The categories are yes, not sure, no. This is interesting when compared to the fact that all these women met the criterion "Is promotable" before being interviewed. Expectation is, of course, tempered by where she is in the organization.

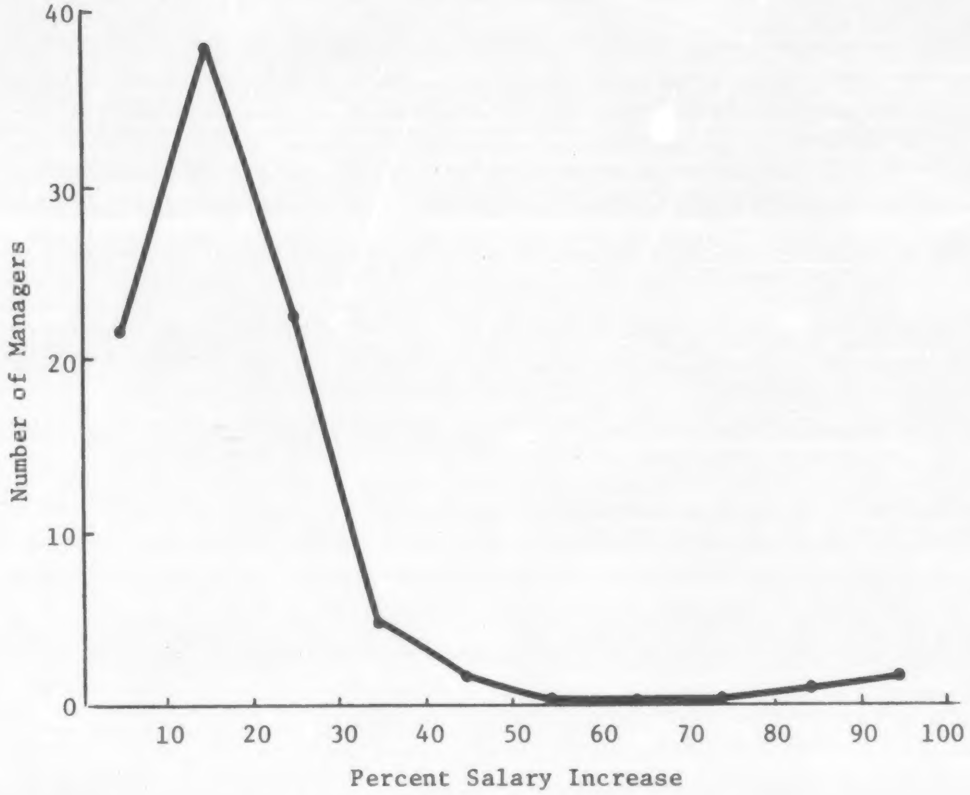

Figure 9. Number of managers by percent salary increase over the past three years as an indicator of success.

Satisfaction

An overwhelming 80 percent of the managers responded that they were very satisfied when asked how satisfied they were with management as a career. The remaining 19 percent were somewhat satisfied. Only one person reported being dissatisfied, and no one reported being very dissatisfied. The variable is dichotomous: very satisfied/satisfied.

Relationships Among Careering Variables

Careering is described by several variables in the current study: age, position, experience, success and satisfaction. We are interested in the multiple interrelationships among these several variables in order to create a picture of careering that best describes the women managers and executives in our sample. Generally, our expectation is that one's current level and type of position, salary increase, expectation of being promoted, and satisfaction with management as a career are indicators of where a manager is currently in her careering. We expect that two variables, her past experience and her age, will be positively related to her current position, salary, and expectation she will be promoted. Obviously, her expectation that she will be promoted in the organization in the near future is inversely related to her position level; presidents are at the top already. As one moves up the organizational heirarchy, there is less opportunity for promotion within the organization.

Our next step is to interrelate these variables (see Table 30). We need a better picture of just how experience is related to type and level of position in the organization, particularly when one controls for age. Age is perhaps our best control for opportunity for women in management, since we expect that younger women have more opportunity for careering. Do relationships between careering variables hold when we control for age or opportunity?

When we first examine the relationships between age and the other careering variables, we find that our expectation that older managers would be in higher positions is not confirmed. Age is not related to position level for these women managers ($x2 = 4.13$, 6*df*, n.s.). Nor is it related to whether she is in a staff or line position ($x2 = .73$, 3*df*, n.s.). It is, however, strongly related to years in current position ($r = .437$, $p < .001$), and years with the organization ($r = .242$, $p < .05$). Age is not related to salary increases ($r = -.131$), expectation of promotion ($x2 = 11.76$, 6*df*, n.s.), or satisfaction with management as a career ($x2 = 6.53$, 6*df*, n.s.). If a manager is older, she is likely to have been with the organization a longer time, and will be more likely to have been longer in her current position. But she is *not* more likely to be higher up in the organization, have a higher increase in salary, greater satisfaction, nor expect promotion. Further, the older she is, the *less* likely she will have been in prior positions in the

Table 30

Relationships Among Careering Variables

	Age	Position Level	Position Type	Years in Current Position	Prior Years in the Organization	Prior Positions in the Organization	Advancement	Management Position in Previous Organizations	Percent of Salary Increase	Expectation of Promotion	Satisfaction with Management
Age		$x^2 = 4.13$, 6df, n.s.	$x^2 = .73$, 3df, n.s.	$r = .437$***	$r = .242$*	$r = -.202$*	$r = .470$***	$x^2 = 1.61$, 3df, n.s.	$x^2 = 12.24$, 6df, n.s.	$x^2 = 11.76$, 6df, n.s.	$x^2 = 6.53$, 6df, n.s.
Level of Position			$x^2 = 11.80$** 2df	$x^2 = 4.57$, 6df, n.s.	$x^2 = 8.84$, 6df, n.s.	$x^2 = 14.40$, 10df, n.s.	$x^2 = 14.63$, 10df, n.s.	$x^2 = 3.60$, 2df, n.s.	$x^2 = 3.41$ 4df, n.s.	$x^2 = 9.68$* 4df	$x^2 = 1.94$, 4df, n.s.
Type of Position				$x^2 = 2.60$, 3df, n.s.	$x^2 = .31$, 3df, n.s.	$x^2 = 3.30$, 5df, n.s.	$x^2 = 9.31$, 5df, n.s.	$x^2 = 2.83$, 1df, n.s.	$x^2 = 1.14$, 2df, n.s.	$x^2 = .93$, 2df, n.s.	$x^2 = 1.21$, 2df, n.s.
Years in Current Position					$r = -.148$	$r = -.335$***	---	$x^2 = 1.35$, 4df, n.s.	$r = -.169$*	$x^2 = 28.97$*** 6df	$x^2 = 7.30$, 6df, n.s.
Prior Years with the Organization						$r = .500$***	---	$x^2 = 12.97$** 3df	$r = -.080$	$x^2 = 19.28$** 6df	$x^2 = 8.28$, 6df, n.s.
Prior Positions in the Organization							---	$x^2 = 12.66$* 5df	$x^2 = 10.06$, 10df, n.s.	$x^2 = 28.21$** 10df	$x^2 = 6.29$, 10df, n.s.
Advancement (Years per Position in the Organization)								$x^2 = 10.08$ 5df, n.s.	$r = -.112$	$x^2 = 29.52$*** 8df	$x^2 = 11.36$, 8df, n.s.
Management Position in Previous Organization									$x^2 = 1.63$, 2df, n.s.	$x^2 = 6.39$, 2df, n.s.	$x^2 = .39$, 2df, n.s.
Percent Salary Increase										$x^2 = 16.06$** 4df	$x^2 = 1.63$, 4df, n.s.
Expectation of Promotion											$x^2 = 4.03$, 4df, n.s.
Satisfaction with Management											

*$p < .05$
**$p < .01$
***$p < .001$

organization ($r = -.202$, $p < .05$), that is, mobile. Age is not related to management-related prior experience outside the organization ($x2 = 1.61$, 3df, n.s.). Apparently, the older she is, the less likely she is to advance within the organization or be rewarded with salary or promotions, even though she has been with the organization a long time. The older she is, the more likely she will have been in her current position a long time as well. Clearly, her position is not a function of age, her current success, or satisfaction. Age is positively related to her experience in the organization, but inversely related to indicators of advancement.

What is the nature of her experience? Does experience predict her current position, success or satisfaction? First, let us examine the nature of her experience. As we expect, women who have had prior experience in management related positions outside the organization prior to joining their current company are likely to have been with their current organization a shorter period of time ($x2 = 12.97$, 3df, $p < .01$), and to have fewer prior positions in their current company ($x2 = 12.66$, 5df, $p < .05$). Further, the longer she has been with the organization, the more likely she is to have prior positions in the organization ($r = .500$, $p < .001$), and this relationship becomes even stronger when we control for age ($r = .578$, $p < .001$). Further, the more prior positions she has had in the organization, the more likely she is to be in her current postion a short period of time ($r = -.335$, $p < .001$). This relationship is less strong when we introduce age as a variable, but is still significant ($r = -.280$, $p < .01$). Years in current position is not related to prior years with the organization ($r = -.148$), but when age is controlled, the relationship becomes strong and negative ($r = -.269$, $p < .01$). That is, the longer she has been in the organization, the newer she is to her current position, if we control for opportunity. Management related experience in a previous, most recent organization does not predict to years in current position ($x2 = 1.35$, 4df, n.s.). It seems that demonstrated mobility within the organization is related to years with the organization. Thus, experience in the organization is related to mobility within it, but this is clearly more true for younger women, and is thus a function of opportunity for women in management.

In sum, persons with prior management experience before joining their present company are less likely to be with the organization a long time, and are likely to have fewer prior positions within the organization, which we would expect. Persons who have more prior positions within the company who now employs them are more likely to be new to their current position, and are more likely to be longer in their current organization, and this relationship becomes stronger when we control for opportunity (age).

In order to more clearly describe advancement in careering, we have related two of the experience variables to obtain an index of advancement within the organization, although we recognize some of these moves may have been lateral ones. We divided the total number of years the manager was in the organization by the number of positions she has held, including her current one, to obtain an average number of years per position in the organization. Figure 10 describes this advancement index, and clearly shows that mobile managers are in their positions for fewer years. As the number of years increases, the women have generally held only one position. The relationship between age and advancement indicates older women have more years per position (r = .470, p < .001).

When we consider each of the experience variables, we find that none are related to either level or type of position. Further, advancement is not related to level of current position ($x2$ = 14.63, 10df, n.s.) or type ($x2$ = 9.31, 5df, n.s.), nor salary (r = -.112), nor satisfaction ($x2$ = 11.36, 8df, n.s.), nor prior management related experience outside the organization ($x2$ = 10.08, 5df, n.s.). Advancement is related to expectation of promotion ($x2$ = 29.52, 8df, p < .000). Women who have demonstrated advancement are more likely to expect promotion when you ask them to predict.

When we examine expectation of promotion further, we find that it is related to level of position, experience in the organization, and salary. Managers who are in lower level positions ($x2$ = 9.68, 4df, p < .05), new to their current position ($x2$ = 28.96, 6df, p < .001), who have been longer with the company ($x2$ = 19.28, 6df, p < .01), have had more prior positions in their organization ($x2$ = 28.21, 10df, p < .01) and have fewer years per position ($x2$ = 29.52, 8df, p < .001) are more likely to expect promotion. Those who expect promotion also have higher salary increases ($x2$ = 16.06, 4df, p < .01). Advancement, and a woman's own expectation of promotion, are the two variables that identify women managers who are benefiting from increased opportunity, even though this is not yet reflected in level and type of position.

Opportunity for Careering/ Education Needed

Clearly, we expect that careering is partly a function of opportunity, which has been partially supported by the relationship between age and advancement just described. We anticipated this, and also asked women managers for their perceptions of local career opportunities for women in management and the educational requirements necessary to take advantage of those opportunities. A descriptive summary of the women managers' and executives' comments is presented here.

In the interviews, 78 managers (77 percent of the sample) responded to two open-ended questions about career opportunities for women in business. The first question was: What are the job opportunities for women in management? Table 31 presents the women managers' responses to this question and the number and percent who responded in each category. Multiple responses are included so the percentages reflect the total number who made the comment and therefore add up to more than 100. Sixty-five percent of the 78 managers who responded said that the

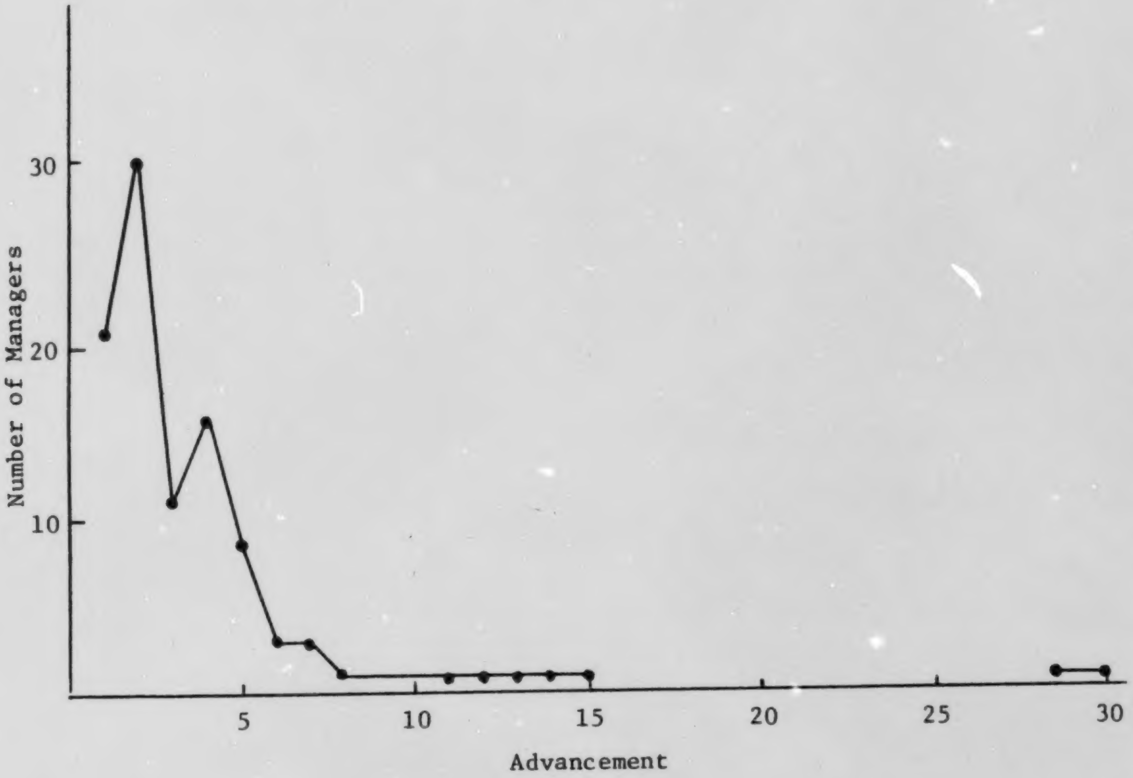

Figure 10. Number of managers by advancement as an indicator of breadth of experience in the organization.

opportunities were good. Of these, 18 percent said that entry level positions were available to women. Fifteen percent said that opportunities are improving, but have a long way to go or that the local market was difficult because of the number of heavy manufacturing companies. Those industries mentioned as having the best opportunities available to women were service industries. The specific positions identified as most available to women exist in personnel, public relations or advertising.

The second question was: What kind of educational background do women need? Table 32 presents the responses to this question. Thirty-one percent of the managers recommended a college degree in business while 24 percent recommended a more specialized degree in finance, accounting, economics or data processing. A liberal arts or broad-based education was said to be important by 18 percent of the managers. Other things mentioned as important were job experience and an understanding of the way organizations operate.

Professional Development

Education

Women managers and executives provided information on several aspects of their educational history. They identified degree currently held, when they received it and from which institution, their area of specialization, and years of formal education. They also indicated if they were currently enrolled in an educational institution, identified that institution and the degree toward which they were working. Finally they indicated if they had completed a formal management training program, who sponsored the program and when they completed it.

An important question for the study centers on the relationship between education and careering. When 78 of the managers were asked what kind of educational background women need, almost all said women should have a business or technical background to really advance. It is therefore important to describe the level of education and area of specialization completed by the women in the sample, including their current enrollment and completion of a formal management training program.

Level of education completed is presented in Table 33. Thirty-five percent of the women are high school graduates, and four percent have associate degrees. Forty-eight percent have a Bachelor's degree, and 14 percent have graduate degrees.

Managers also reported total years of formal education. Average years of education is 16, with a range of 12 to 21 years (SD = 2.10).

This picture changes somewhat when we include education in progress. Eighteen percent of the women managers are currently enrolled in college or graduate school. Of those who are currently enrolled, 11 are high school graduates only, six have Bachelor's degrees and one has a Master's degree. All are working on business degrees in accounting, management, or marketing. When we combine level of education completed with

Table 31

Women Managers' Perceptions of Career Opportunities for Women in Management

Women Manager's Perceptions of Career Opportunities	Number and Percent Responding	
	n	Percent
• Opportunities are good	51	65.4
• Entry level opportunities are good, but not middle management opportunities	14	17.9
• Opportunities exist in manufacturing if one has a technical background (i.e., Engineering, Accounting, Computer Science)	12	15.4
• Opportunities are improving but need to get better	11	14.1
• Women are not willing to make the necessary sacrifices in terms of time and effort to advance	10	12.8
• Opportunities exist in the service industries	5	6.4
• Colleges do not adequately prepare women for the "man's" world of business (i.e., corporate life, politics)	5	6.4
• Opportunities exist in Personnel, Public Affairs, and Advertising Departments	4	5.1
• Women have to prove themselves more than men	4	5.1
• Women have false expectations regarding opportunities with a college degree	4	5.1
• Opportunities are bad	3	3.8
• Women must be patient	2	2.6

Table 32

Women Manager's Perceptions of Educational Background Necessary for Women in Management

Background Needed	Number and Percent Responding n	Percent
Business administration	24	30.8
Accounting or finance	19	24.4
Masters of Business Administration	16	20.5
A college degree	10	12.8
Any technical degree	10	12.8
Prior work experience	10	12.8
Computer science degree	9	11.5
Knowledge of corporate structure and politics	9	11.5
Arts and humanities degree with business courses	8	10.3
Engineering degree	6	7.7
Arts and humanities degree	6	7.7
Management education and on-the-job experience	3	3.8
Good communication skills	3	3.8
Career goals orientation	2	2.6
Volunteer activities	2	2.6
Any background as long as you are a capable person	2	2.6

Table 33

Level of Education Completed for Women Managers and Executives

Level of Education	n	Percent
High School	35	34.7
Associate Degree	4	4.0
Bachelor's Degree	48	47.5
Master's Degree	13	12.9
Doctor of Philosophy Degree	1	1.0

currently enrolled, we can create categories of level of education completed/enrolled, a variable which credits persons striving for more education.

Areas of specialization for the 65 percent of the sample who completed associate degrees, college or graduate school varied. Of those who completed one of these three degrees, 31 (47 percent) specialized in business or technical areas such as accounting, marketing, economics, journalism, or radio and television. Eighteen (27 percent) specialized in arts and humanities (e.g. English literature, foreign language, and history). The 17 remaining graduates (27 percent) specialized in the social sciences ($n = 9$) or other professional areas (nursing or medical technology, $n = 3$, home economics, $n = 2$; library and secretarial science, $n = 3$).

Table 35 presents data on those completing a degree or currently enrolled by area of specialization. Of those with Bachelor's degrees, 28 of 53 majored or are specializing in a business or technical field compared to 15 of 19 who have or are currently working toward Master's degrees. In contrast, 13 of 53 who have or are working toward Bachelor's degrees specialize in arts and humanities and two of 53 in social sciences or one of the other fields in this category (e.g., nursing, home economics, etc.). When we include degrees in progress, 58 percent of the sample of 77 with other than a high school diploma have specialized in a business or technical field. All of those currently enrolled at whatever level are specializing in business and technical fields. Clearly, women in management believe a business or technical degree is important for advancement, and of those who have gone beyond high school, most have completed or are enrolled in a field related to management ($x2 = 13.76$, 4df, $p < .01$).

Table 34

Level of Education Completed/Enrolled
for Women Managers and Executives

Level of Education	n	Percent
High School	24	23.8
AA Degree and/or Enrolled in College	15	14.9
College Degree Only	42	41.6
College Degree and Enrolled in Graduate School	20	19.8
Total	101	100.1

Table 35

Associate/College/Graduate Degree by Area of Specialization for Women Managers and Executives

	Area Of Specialization								
	Business And Technical		Arts And Humanities		Social Science And Others		Total		Grand Total
	Completed	Enrolled	Completed	Enrolled	Completed	Enrolled	Completed	Enrolled	
Associate Degree	2	0	0	0	2	0	4	0	4
Bachelor's Degree	17	11	13	0	12	0	42	11	53
Master's Degree									
Master of Arts	4	7	1	0	3	0	8	7	15
Master of Business Administration	4	0	0	0	0	0	4	0	4
Doctor of Philosophy Degree	0	0	1	0	0	0	1	0	1
Total	27	18	15	0	17	0	59	18	77
Grand Total	45		15		17		77		

Sixty-four percent of the women managers completed a formal management training program, another means of obtaining training in business. Of these, 48 percent attended a management training program sponsored by their company. Twenty-nine percent attended programs given by professional groups such as the American Society for Training and Development and the American Management Society, or by private consulting companies. Twenty-three percent attended management training programs sponsored by universities or colleges (e.g. University of Wisconsin-Madison, University of Minnesota, University of Chicago, and University of Wisconsin-Milwaukee).

Professional Activities

An indirect assessment of professional involvement and commitment can be made from the number of activites related to one's position or profession. Managers reported the activities related to their position aside from company sponsored functions. Persons choose to devote their free time to such activities ranging from participation in professional associations to community volunteer work. Twenty-two managers were not involved in any activities. For the rest of the sample, the number of activities ranged from one to nine. Forty managers were involved in one or two activities. Twenty-eight managers were involved in three or four activities and 11 managers, five to nine activities. The average number of activities was 2.25, the standard deviation, 2.14.

The highest participation is in professional organizations. Fifty-four percent of the women participated in organizations such as the American Management Association, American Society for Training and Development, National Accounting Association or American Institute of Banking. Forty-four percent of the managers belonged to professional women's organizations like Women in Communications or the International Association of Personnel Women. Participation in civic organizations such as the United Way or Easter Seals was 27 percent compared to 15 percent for other volunteer organizations like a children's arts carnival or church groups. Nine percent of the managers were involved in civic women's organizations such as Junior League or YWCA. Finally, five percent were involved in committees within their organizations such as Hospitality Committee or Corporate Education Committee.

We then created a professional activities variable to describe not just the number, but rather, the breadth of her activities not sponsored by the employing company. Three types of organizations were considered: civic organization activities, professional management association activities, and professional womens' association activities. For coding purposes, the manager was assigned a 0, 1, 2, or 3 depending on the number of different types of these three activities she listed. Twenty-three percent were involved in no activities, 38 percent were in one of the three types of activities, 28 percent were in two of the three types and 12 percent were involved in all three types.

Relationships Among Professional Development Variables

Professional development is described by several variables in the current study: age, level of education completed, whether she is currently enrolled, area of specialization, completion of a management training program, and the number and breadth of professional activities that are not company sponsored but are related to one's position.

Table 36 indicates interrelationships among the professional development variables. There are few, if any, relationships. For the most part, these variables are independent.

One important relationship to report is between age and level of education completed. In this sample, younger women are more likely to have completed higher levels of education (*x*2 = 24.43, 12*df*, *p* < .05). It is interesting to note, however, that when we examine the relationship between those currently enrolled and age, the relationship is not significant (*x*2 = 5.61, 4*df*, n.s.). When we combine level of education from those completing a degree beyond high school or currently enrolled (1 = high school, 2 = associate degree or currently enrolled in a college degree program, 3 = college degree, 4 = college or graduate degree or currently enrolled in a graduate program) to create the variable level of education completed/enrolled, the relationship between age and education is not significant (*x*2 = 18.22, 12*df*, n.s.).

Clearly, the inverse relationship between age and education in management is disappearing as more and more women are seeking degrees in management, irrespective of their age. This finding is even more pronounced by the result that age is not related to completing a management training program. Again, women in management are seeking professional development opportunities regardless of age, and this is reinforced by a lack of relationship between age and professional activities as well (*x*2 = 9.02, 16*df*, n.s.).

Nor does level of education completed seem to be related to whether a woman seeks more education as measured by whether she is currently enrolled (*x*2 = 6.54, 3*df*, n.s.). Women are also likely to complete a management training program irrespective of the level of education they have already completed (*x*2 = 2.84, 4*df*, n.s.), or whether they are currently enrolled (*x*2 = 1.92, 3*df*, n.s.). Being currently enrolled in a degree proram does not seem to hamper them in involvement in professional activities either--they are as likely to be involved irrespective of their enrollment in a degree program (*x*2 = 1.44, 4*df*, n.s.). Further, women in management all seem to be aware of the importance of involvement in professional activities, irrespective of their level of education completed or enrolled (*x*2 = 20.06, 12*df*, n.s.), or whether they have completed a management training program (*x*2 = 7.15, 4*df*, n.s.). In sum, the relationship between age and education disappears when we give credit to those women who are currently enrolled in degree programs. Level of education is not related to whether the woman has chosen to complete a management training program, or whether she chooses to involve herself in professional activities that are not sponsored

Table 36

Relationships Among Professional Development Variables

	Age	Level of Education Completed	Currently Enrolled	Level of Education Completed/ Enrolled	Area of Specialization Completed/ Enrolled	Completed Management Training Program	Number of Professional Activities	Breadth of Professional Activities
Age	---	$x^2 = 24.43$, 12df, $p < .05$	$x^2 = 5.61$, 4df, n.s.	$x^2 = 18.22$, 12df, n.s.	$x^2 = 4.68$, 8df, n.s.	$x^2 = 2.84$, 4 df, n.s.	$x^2 = 9.02$, 16df, n.s.	$x^2 = 9.71$, 12df, n.s.
Level of Education Completed		---	$x^2 = 6.54$, 3df, n.s.	---	$x^2 = 3.34$, 4df, n.s.	$x^2 = 2.95$, 3df, n.s.	$x^2 = 17.02$, 12df, n.s.	$x^2 = 3.74$, 6df, n.s.
Currently Enrolled			---	---	$x^2 = 7.41$, 4df, n.s.	$x^2 = 1.92$, 3df, n.s.	$x^2 = 1.44$, 4df, n.s.	$x^2 = 3.60$, 3df, n.s.
Level of Education Completed/Enrolled				---	$x^2 = 13.76$, 4df, $p < .01$	$x^2 = 1.92$, 3df, n.s.	$x^2 = 20.06$, 12df, n.s.	$x^2 = 5.56$, 9df, n.s.
Area of Specialization Completed/Enrolled					---	$x^2 = .01$, 2df, n.s.	$x^2 = 8.30$, 8df, n.s.	$x^2 = 2.04$, 6df, n.s.
Management Training Program Completed						---	$x^2 = 7.15$, 4df, n.s.	$x^2 = 7.57$, 3df, n.s.
Professional Activities (Number)							---	$x^2 = 146.35$, 12df, $p < .001$
Professional Activities (Breadth)								

*$p < .05$
**$p < .01$

by the company. And if she is currently enrolled in a degree program, she is as likely to be involved in professional activities as women not enrolled. Number and breadth of professional activities are highly related ($x2$ = 146.35, 12df, p < .001).

Area of specialization is still another indicator of professional development. We commented that women who are currently enrolled are all enrolled in a business or technical field. Consequently, we combined the area of specialization for those who have completed degrees and who are currently enrolled. Of those who have gone beyond high school, most have completed or are enrolled in a field related to management. However, women complete a management training program irrespective of their educational experience in a management related field ($x2$ = .014, 2df, n.s.).

A review of the interrelationships among professional development variables shows that women in management are seeking education through current enrollment, completing management training programs, and involvement in professional activities, irrespective of the level of education they currently have. Those who have gone beyond college are significantly more likely to have specialized in business and technical areas, than other areas, particularly if they are seeking more education. The lack of relationships among types of professional development (education, management training program, number and breadth of professional activities) is evidence for both the breadth and depth of their choices to improve themselves. Further, they believe business and technical degrees are important for advancement, and they are seeking to acquire them.

Relationships Among Careering and Professional Development Variables

We expect that women who develop themselves professionally through education, specialization in business or technical field, complete management training programs, and engage in professional activities will be at a higher position level, advance in the organization, have higher salary increases, be more satisfied with management as a career and be more likely to expect promotion.

These expectations are based on the general assumption that a manager's attempts at professional development will be rewarded by advancement, level of position, salary and satisfaction, and that one of the motivations for professional development is expectation of promotion.

Thus, our major expectation is that level of education completed will be related to advancement in the organization and to the level and type of position she holds currently. Contrary to expectation, neither level of education completed ($x2$ = 4.08, 6df, n.s.) nor level completed/enrolled ($x2$ = 1.35, 2df, n.s.) predicts the position level a manager or executive currently holds in the organization. Education completed ($x2$ = 2.56, 3df, n.s.) or enrolled (*x*2 = 0.85, 1*df*, n.s.) does not predict type of position (line or staff) either. Combining level of education completed with degree in progress (currently enrolled) does not change this lack of relationship between education and position level (*x*2 = 5.69, 6*df*, n.s.) or type (*x*2 = 5.57, 3*df*, n.s.). Further, whether she specializes in a business or technical field does not predict her position level (*x*2 = 1.81, 4*df*, n.s.) or type (*x*2 = 0.78, 2*df*, n.s.). Those with more management related degrees are not more likely to be in line positions.

What is particularly interesting about this review of the relationships between professional development and careering is the *lack* of relationship between professional development variables and advancement. We expect that women who develop themselves professionally are more likely to advance within the organization. This is not the case. Advancement is not predicted by either level of education (*x*2 = 23.03, 15*df*, n.s.), whether she is currently enrolled (*x*2 = 9.02, 5*df*, n.s.), level of education completed/enrolled (*x*2 = 22.29, 15*df*, n.s.), area of specialization completed/enrolled (*x*2 = 8.71, 10*df*, n.s.), whether she has completed a management training program (*x*2 = 2.13, 5*df*, n.s.) or by her involvement in number of professional activities (*x*2 = 20.27, 20*df*, n.s.), or breadth (*x*2 = 12.16, 15*df*, n.s.).

Further, level of education completed is not rewarded by higher salary increases (*x*2 = 5.76, 9*df*, n.s.) or satisfaction with management (*x*2 = 9.18, 6*df*, n.s.). This lack of relationship does not change if we consider whether she is currently enrolled or if we combine level of education completed with that in progress (see Table 37).

While examination of the interrelationships among careering variables indicated that expectation of promotion is an important indicator of other careering variables, women who expect to be promoted do not seem to be basing that expectation on their level of education completed (*x*2 = 11.49, 6*df*, n.s.), whether they are enrolled now (*x*2 = 0.15, 2*df*, n.s.), whether they have a business/technical specialization (*x*2 = 8.82, 4*df*, n.s.), whether they have completed a management training program (*x*2 = 4.76, 2*df*, n.s.), or the extent to which they are involved in professional activities (*x*2 = 7.45, 8*df*, n.s.).

The only professional development indicator that seems to predict level of position is whether she has completed a management training program (*x*2 = 8.97, 2*df*, $p < .05$). Women in upper level positions are significantly *less* likely to have completed such a program. Women in higher level positions are significantly more likely to be involved in a number of professional activities not sponsored by the company (*x*2 = 26.34, 8*df*, $p < .001$), and in more types of activities, indicating breadth (*x*2 = 21.41, 6*df*, $p < .01$). Both findings seem to be explained by the fact that upper level managers, which include the executives in the sample, are less likely to have use for the kinds of skills taught in management training programs, nor does she need such a program for advancement. Further, involvement in non-company sponsored activities outside the organization is one of the responsibilities of upper level managers and executives.

Table 37

Relationship Among Careering and Professional Development Variables

	Position Level	Position Type	Advancement	Management Position in Previous Organization	Percent Salary Increase	Expectation of Promotion	Satisfaction with Management
Age							
Level of Education Completed	$x^2 = 4.08$, 6df, n.s.	$x^2 = 2.56$, 3df, n.s.	$x^2 = 23.03$, 15df, n.s.	$x^2 = 2.70$, 3df, n.s.	$x^2 = 5.76$, 9df, n.s.	$x^2 = 11.49$, 6df, n.s.	$x^2 = 9.18$, 6df, n.s.
Currently Enrolled	$x^2 = 1.35$, 2df, n.s.	$x^2 = .85$, 1df, n.s.	$x^2 = 9.02$, 5df, n.s.	$x^2 = .09$, 1df, n.s.	$x^2 = .20$, 3df, n.s.	$x^2 = .15$, 2df, n.s.	$x^2 = 4.84$, 2df, n.s.
Level of Education Completed/Enrolled	$x^2 = 5.69$, 6df, n.s.	$x^2 = 5.57$, 3df, n.s.	$x^2 = 22.29$, 15df, n.s.	$x^2 = 1.64$, 3df, n.s.	$x^2 = 4.67$, 9df, n.s.	$x^2 = 11.14$, 6df, n.s.	$x^2 = 12.01$, 6df, n.s.
Area of Specialization Completed/Enrolled	$x^2 = 1.81$, 4df, n.s.	$x^2 = .78$, 2df, n.s.	$x^2 = 8.71$, 10df, n.s.	$x^2 = 3.60$, 2df, n.s.	$x^2 = 5.61$, 6df, n.s.	$x^2 = 8.82$, 4df, n.s.	$x^2 = .87$, 4df, n.s.
Management Training Program Completed	$x^2 = 8.97$, 2df, $p < .05$	$x^2 = .25$, 1df, n.s.	$x^2 = 2.13$, 5df, n.s.	$x^2 = .18$, 1df, n.s.	$x^2 = 5.53$, 3df, n.s.	$x^2 = 4.76$, 2df, n.s.	$x^2 = 2.67$, 2df, n.s.
Professional Activities (Number)	$x^2 = 26.34$, 8df, $p < .001$	$x^2 = .59$, 4df, n.s.	$x^2 = 20.27$, 20df, n.s.	$x^2 = 3.50$, 4df, n.s.	$x^2 = 21.66$, 12df, $p < .05$	$x^2 = 7.45$, 8df, n.s.	$x^2 = 21.28$, 8df, $p < .01$
Professional Activities (Breadth)	$x^2 = 21.41$, 6df, $p < .01$	$x^2 = 5.54$, 3df, n.s.	$x^2 = 12.16$, 15df, n.s.	$x^2 = 4.64$, 3df, n.s.	$x^2 = 11.66$, 9df, n.s.	$x^2 = 5.91$, 6df, n.s.	$x^2 = 20.08$, 6df, $p < .01$

It is also interesting to note that the more activities she engages in, the lower her salary increases ($x2 = 21.66$, 12*df*, $p < .05$). This relationship does *not* hold when we consider the *breadth* of her activities ($x2 = 11.66$, 9*df*, n.s.). This may show that *too* many activities outside the company can negatively affect salary increase. This relationship disappears when we consider breadth of activities, which is also probably a better measure of professional development opportunities that accrue from such involvement. However, the more activities she is involved in, the more satisfied she is with management as a career ($x2 = 21.28$, 8*df*, $p < .01$). Again, however, people who have completed a management training program are not more likely to expect promotion.

Why then, if professional development is not related to careering, either to advancement, level or type of position, or salary, do women seek more education? If they do not expect to be promoted because of it, why do they continue to improve themselves?

One hypothesis is that education completed is related to advancement, but that such a relationship is a relatively new development in organizations. In studying the interrelationships among careering variables, older women are less likely to advance in the organization, and older women are less likely to have completed higher levels of education (although this disappears when we consider degrees in progress). Further, lack of a relationship between education and advancement may be a function of the size and type of the organization in which a woman finds herself, or the support available in the organization. We do know that women managers are more likely to be in finance/insurance organizations and in larger organizations, with one exception, that is, small service organizations. One can argue then, that advancement and expectation of promotion may be related, if we control for opportunity and support. Consequently, after discussing Personal Roles and Socialization, we examine the effects of opportunity, support and socialization on careering and professional development variables.

Personal Roles

Multiple Roles

The careering and professional development of women needs to be considered in light of the number of other roles and responsibilities she has besides her career. Many women have multiple roles that include spouse and parent. Table 38 presents marital status and number of children for the managers in the sample. Fifty-six percent of the managers are married, 26 percent are single, 16 percent are divorced, and two percent are widowed. Fifty-three percent of the married, divorced and widowed women have no children. Ninety-two percent of the single women have no children. Forty-seven percent of married women have children, and 30 percent have more than one child.

Table 38

Marital Status and Number of Children of the Women Managers

	Marital Status							
	Married		Single		Divorced		Widowed	
Number of Children	n	Percent	n	Percent	n	Percent	n	Percent
None	31	54.4	24	92.3	8	50.0	1	50.0
One	9	15.8	2	7.7	4	25.0	1	50.0
Two	12	21.0	-	--	3	18.7	-	--
Three	2	3.5	-	--	-	--	-	--
Four	2	3.5	-	--	-	--	-	--
Five	1	1.0	-	--	1		-	--
Total	57		26		16		2	

Considering the issue of multiple roles, 26 percent of the women are both spouses and parents. Eleven percent are either single, divorced or widowed with children, therefore they have the role of parent. The 31 percent who are married with no children are spouses. Thirty-three percent are either single, divorced or widowed with no children, being neither parents nor spouses at this point in their lives. Number of roles was classified as follows: single = 1, spouse = 2, single with children = 3 and spouse with children = 4.

Support at Home

Spouse's occupation was examined as an indicator of support for the manager in her role. To make comparisons between the manager's position and that of her spouse, all occupations were assigned a socioeconomic status score. The scoring system was designed by the U.S. Bureau of the Census (1963) and includes 297 occupational categories. Socioeconomic status scores range from zero to 100 and are based on average levels of education and income for adult males. The purpose for using the scoring scheme was to compare the manager's occupation with that of her spouse (and parents) to discern equality of employment. We are inferring that spouses of equal or higher occupational status are able to be more supportive of the women managers since they have more similar careering experiences in their own work than spouses whose socioeconomic status is significantly lower than the women manager's. For example, a spouse who is involved in a corporate setting as an executive may be more helpful and supportive of a manager who is trying to obtain a promotion than a spouse who is involved in professional sports.

Table 39 displays the occupations of the spouses of the women managers who are currently employed, ranked from high to low on socioeconomic status score. Two spouses are not employed. The purpose of the table is to present the range of occupations and status scores. Socioeconomic status scores range from 92 to 52. The average socioeconomic status score for the spouses was 88.42, with a standard deviation of 10.33. Eighty percent of the spouses have scores of 84 and above. Forty-seven percent of the spouses are attorneys, engineers, presidents and vice-presidents of companies, or managers.

To make comparisons between the managers' occupational status and that of her spouse and parents, socioeconomic status scores were compared. Almost all of the managers received socioeconomic status scores in the 90's. The average socioeconomic status score for the managers was 94.14, the standard deviation, 4.04. If the manager's occupational status was 10 or fewer points higher than her spouse's or her parents' (approximately one standard deviation from above the mean), they were considered to be of equal status. If in either case the manager's occupational status score was more than 10 points higher, she was considered to be of higher status. In no case was the manager's spouse or parents more than 10 points higher because the managers were primarily in the upper 10 percent of the scale. In comparison with their spouses, 75 percent of the married managers (n = 41)

Table 39

Spouses' Occupations and Socioeconomic Status Scores

Spouse's Occupation	n	Percent	Socioeconomic Status Score*
Attorney	5	9.0	98
Banker	1	1.8	96
Administrator	1	1.8	96
Educational Coordinator for a School System	1	1.8	96
Investor	1	1.8	96
Professor	1	1.8	96
Sales Trainer	1	1.8	96
Systems Analyst	1	1.8	96
Engineer	8	14.5	95-96*
Accountant	2	3.6	92
Credit Analyst	1	1.8	92
President or Vice-President of Company/Corporation	7	12.7	91-96*
Instructor	1	1.8	89
Insurance Sales/Adjuster	2	3.6	89
Store Owner	1	1.8	88
Real Estate Broker	1	1.8	86
Manager	6	10.9	84-96*
Sales Manager	1	1.8	84-89*
General Contractor	2	3.6	84
Construction Firm Owner	1	1.8	79
Art Dealer	1	1.8	77
Tool and Die Maker	2	3.6	77
Video Sales Consultant	1	1.8	77
Laboratory Technician	1	1.8	73
Photographer	1	1.8	73
Factory Inspector	1	1.8	71
Service Station Owner	1	1.8	68
Golf Professional	1	1.8	60
Auto Repair Person	1	1.8	52
Total	55		

*Socioeconomic Status Score range, depending on industry.

were of equivalent occupational status compared to 25 percent (n = 14) who were of higher status, and this difference is statistically significant ($x2 = 13.25$, 1df, $p < .001$). No manager's spouse had a socioeconomic status score greater than 10 points above hers.

Socialization

Occupational Mobility/ Careering Modeling

A manager's occupational mobility can be measured by comparing her occupational status now to her parents' status when she was growing up. All managers provided their parents' occupation. Parents' occupations were assigned socioeconomic status scores using the same procedure applied to spouses' occupation with one major exception. Because the scores are based on average levels of education and income for adult males, there is no score for the occupation of homemaker. In order to create a variable that would consider homemaker status, we include whether the mother is employed outside the home as a variable. Thirty-four percent of the mothers were employed outside the home when the managers were growing up; and 65 percent were homemakers.

Table 40 presents a ranking of mothers' occupations from high (96) to low (32) on socioeconomic status score and the number and percentage of mothers in each occupational category. The largest occupational categories are teacher (7 percent), secretary (5 percent), office worker (4 percent), and sales clerk (4 percent).

Table 41 presents a similar ranking of fathers' occupations. There is a greater range of socioeconomic status scores for fathers (99 to 16) as well as a greater range of occupations (37 compared to 16 for mothers).

For purposes of data analysis, we are interested in calculating a socioeconomic status score for the manager's parent(s) that could be compared to the socioeconomic status score of the manager. Several options were considered. One option was to consider only the father's score since 66 percent of the mothers were homemakers. Because our sample of managers are women, we felt it important to consider the mother's occupation outside the home since this provides an additional source of careering modeling for women.

Thirty-two managers were raised in families where both parents worked outside the home. Socioeconomic status scores for each of the parents were compared statistically to test whether combining them changed the socioeconomic status score for the family. A paired t-test which compared the mother's socioeconomic status score to the father's was done for the 32 cases. The t-test showed no statistically significant difference between mother's and father's socioeconomic status scores ($t = -1.32$, df = 31).

Table 40

Mothers' Occupations and Socioeconomic Status Scores

Mother's Occupation	n	Percent	Socioeconomic Status Score
Professor	1	1.0	96
Pharmacist	1	1.0	95
Teacher	7	6.9	89
Caseworker	1	1.0	85
Postmaster	1	1.0	82
Secretary	5	4.9	82
Self-employed, business	1	1.0	76
Office Worker	4	4.0	73
Nurse	3	3.0	71
Restaurant Manager	1	1.0	71
Sales Clerk	4	4.0	61
Grocer	3	3.0	54
Factory Worker	1	1.0	40
Waitress	1	1.0	39
Nurse's Aide	1	1.0	32
Homemaker	66	65.3	--
Total	101	100.0	

Table 41

Fathers' Occupations and Socioeconomic Status Scores

Father's Occupation	n	Percent	Socioeconomic Status Score*
Doctor/Dentist	4	4.0	99
Attorney	1	1.0	98
Banker	2	2.0	96
Professor	1	1.0	96
Engineer	2	2.0	95-96
Pharmacist	1	1.0	95
Television Announcer	1	1.0	95
Accountant	4	4.1	92
Industrial Buyer	3	3.0	92
Agency Executive	5	5.1	91-95*
Supervisor	6	6.1	79
Factory Foreman	4	4.1	79
Manager	8	8.2	78-89*
Salesperson	6	6.1	77-88*
Inspector	1	1.0	76
Fireman	1	1.0	73
Lab Technician	1	1.0	73
Office Worker	2	2.0	73
Postal Worker	2	2.0	73
Self-employed, business	13	13.3	71-88*
Surveyor	2	2.0	71
Machinist/Welder	2	2.0	68
Self-employed, Service Station	1	1.0	63
Car Dealer	2	2.0	61
Repairman	2	2.0	61
Butcher	1	1.0	60
Grocer	2	2.0	54
Crane Operator/Lumberman	1	1.0	52
Farmer	5	5.1	50
Railroad Worker	2	2.0	42-65*
Truck Driver	2	2.0	40
Construction Worker	2	2.0	38
Barber	1	1.0	37
Factory Worker	1	1.0	37
Miner	1	1.0	36
Laborer	2	2.0	25
Maintenance	1	1.0	16
Total	98	100.1	

*Range, depending on industry.

The option we decided upon was to average the father's and mother's socioeconomic status scores in cases where both parents worked outside the home. In families where only one parent worked outside of the home, the working parent's socioeconomic status score was considered the family occupational status. The average family socioeconomic status score was 85.34, with a standard deviation of 29.08. The manager's socioeconomic status was compared to her family's in the same way it was compared to her spouse's. If the manager's score was 10 or fewer points higher than her family's, she and her family were considered to be equal in occupational status. If the manager's score was more than 10 points higher, she was considered to be of higher occupational status. Thirty-six managers were of equivalent occupational status to their family's, compared to 64 who were in occupations of higher status, and this difference is statistically significant ($\underline{x}2 = 7.84$, 1$\underline{df}$, $\underline{p} < .01$).

Parent's occupations were also classified according to Department of Labor (1977) occupational categories for descriptive purposes. The four general categories are: professional, technical and managerial; clerical and sales; skilled and semi-skilled; and service. The additional category of homemaker was included for mother's occupation.

Fifty-seven percent of the fathers and 20 percent of the mothers were in professional, technical and managerial occupations such as attorney, pharmacist, banker, manager, and engineer. Seven percent of the fathers and eight percent of the mothers were in clerical and sales occupations. Twenty-five percent of the fathers and two percent of the mothers were employed in skilled or semi-skilled occupations. In service occupations such as waitress or police officer, there were nine fathers and five mothers. Lastly, 65 percent of the mothers were homemakers when the managers were growing up. No information was available for three of the fathers who may have been deceased.

Table 42 combines the data for mother's and father's occupation. Thirty-eight percent of the managers came from families where the father was a professional and the mother was a homemaker compared to 11 percent from homes where both parents were professionals. Sixty-six managers had at least one professional parent. Thirty-five managers had mothers who worked outside the home, and 20 of the mothers were employed in professional or technical occupations.

Expectations for Achieving

Another aspect of the manager's family of origin that is of interest is birth order. Given the higher expectations parents typically place on the first born or only child, we are interested in the managers' birth order relative to her siblings. In our sample, 50 managers were first-born children and 51 were later-born.

Table 43 presents data on birth order and number of siblings for the sample of women managers. Of the 50 first-borns, nine are only children and 41 have younger siblings. The number of siblings ranges from zero to 12. One manager is the twelfth

Table 42

Comparison of Mother's and Father's Occupation for the Sample of Women Managers

	Mother's Occupation											
	Professional, Technical and Managerial		Clerical and Sales		Skilled and Semi-Skilled		Service		Homemaker		Total	
Father's Occupation	n	Percent of Total	n	Percent of Total	n	Percent of Total	n	Percent of Total	n	Percent of Total	n	Percent of Total
Professional Technical, and Managerial	11	10.9	6	5.9	-	-	2	2.0	38	37.6	57	56.4
Clerical and Sales	-	-	-	-	-	-	-	-	7	6.9	7	6.9
Skilled and Semi-Skilled	4	4.0	2	2.0	1	1.0	2	2.0	16	15.8	25	24.8
Service	3	3.0	-	-	-	-	1	1.0	5	4.9	9	8.9
No Occupation Listed	2	2.0	-	-	1	1.0	-	-	-	-	3	3.0
Total	20	19.9	8	7.9	2	2.0	5	5.0	66	65.2	101	100.0

child in a family of thirteen. Four managers are from families of nine children. Twenty-eight managers are from two child families, having either one older or younger sibling. A majority of the managers ($\underline{n} = 56$) are from families with less than five children.

Opportunity, Support and Socialization for Careering and Professional Development

Several of the variables can be considered indicators of opportunity for careering and professional development in management. Age is one indicator; another is occupational level compared with her mother and her parents. Still another indicator of opportunity for women in management is the extent to which they are employed in organizations of different size and type of industry.

Several variables can be considered indicators of support for careering and professional development. One source of support is the number of women manager colleagues in the organization at her position level; we infer this from the number of women we interviewed per organization. Another source of support is the woman's family. How many personal roles and responsibilities does she have outside her management position responsibilities? Do these multiple responsibilities interfere with her careering and professional development? Does her husband understand her role, as inferred from similarity in occupational level?

Early socialization for careering can be judged from age, as well as modeling for careering as the woman manager was growing up. Was her mother employed outside the home, and in what occupations? Was her father employed, and in what occupations? Finally, was she a first-born child, and the recipient of higher expectations? Several relationships between opportunity, support and socialization variables on careering and professional development can be inferred from the present study, although caution should be used in interpreting the results since labeling the variables as indicators of opportunity, support and socialization calls for a higher level of inference than those made from careering and professional development variables alone. Table 45 describes the interrelationships among these several variables, and Table 46 reports the percent of the variance in several careering variables contributed to the variables expected to affect careering.

Opportunity for Careering and Professional Development

Age, as one indicator of opportunity, shows that younger women today are experiencing more opportunity than older women. While older women are more experienced in the organization than younger women, they are not as likely to advance in a company compared with younger women. Older women have somewhat less education than younger women, but this disappears when one

Table 43

Birth Order and Number of Siblings for Women Managers and Executives

	Number of Younger Siblings										
Birth Order	Zero n	One n	Two n	Three n	Four n	Five n	Six n	Seven n	Eight n	Total n	Total Percent
First-born	9	18	8	9	3	-	1	1	1	50	49.5
Second-born	10	11	3	-	-	-	-	1	-	25	24.7
Third-born	3	5	2	-	-	-	-	-	-	10	9.9
Fourth-born	2	-	1	1	-	-	-	-	-	4	4.0
Fifth-born	2	1	-	-	1	-	-	-	-	4	4.0
Sixth-born	-	2	-	1	-	-	-	-	-	3	3.0
Seventh-born	1	1	-	-	-	-	-	-	-	2	2.0
Eighth-born	1	1	-	-	-	-	-	-	-	2	2.0
Eleventh-born	-	1	-	-	-	-	-	-	-	1	1.0
Total										101	100.0

considers education in progress; older women are going back to school to get degrees, which makes them comparable to younger women as a group on educational level.

Women today are more likely to be working than their mothers, and they are of higher occupational status than their parents when managers were growing up. One of the more important indicators of opportunity is the extent to which organizations which differ on size and type of industry are employing women in management and executive positions. While one may argue that women may choose some organizations over others, this may indeed be a function of perceived opportunity. Clearly, there are more women managers in organizations with over 2000 employees. These large organizations are in manufacturing and finance/insurance. This is partly a function of the geographical area, since Milwaukee has a large number of manufacturing companies. But it is also unusual that such a large number of women managers are in manufacturing industries. This is in contrast to expectations made in 1965 by women and men in business (Bowman et al., 1965) that equal access existed in only a few areas, such as retail trade, in staff rather than line positions, in smaller companies and in government and educational social service organizations. Virtually no opportunity was seen in production jobs in manufacturing. In the current study, there are more women in larger manufacturing as well as finance/insurance companies (see Table 44). The prediction that there would be more opportunity in smaller companies holds true, however, when we consider the relationship between the organization's size and type of industry. While the probability that the woman manager will advance in the organization is similar, irrespective of the size or type of the organization, the level and type of position she is currently at is significantly related to both the size of the organization ($x2 = 25.27$, $6df$, $p < .001$) and type of industry ($x2 = 42.82$, $8df$, $p < .001$) (Table 45).

While there are larger numbers of women interviewed in manufacturing and finance/insurance organizations, those interviewed in manufacturing organizations are somewhat more likely to be in lower level positions. Women in transportation/communication/utilities companies are also more likely to be in lower level positions. While there are larger numbers of women managers in finance/insurance, these women are more likely to be in middle and upper level positions. Consequently, there seems to be more opportunity in finance/insurance organizations for women. Further, more women are in middle level positions in wholesale/retail organizations, and upper level positions in service organizations.

The latter observations fit with the predictions from the 1965 study that there is more opportunity for women in smaller organizations, and there are more line managers in small organizations (less than 300 employees) ($x2 = 11.08$, $3df$, $p < .05$). This is due to the fact that many executives we interviewed are presidents of small service companies. There are also more line managers in medium sized organizations (900 to 1999 employees); seven of the eight we interviewed were line managers.

Table 44

Number of Women Managers in Position Level by Type of Industry

Type of Industry	Position Level Lower	Middle	Upper
Manufacturing	16	11	0
Transportation/Communication Utilities	9	0	0
Wholesale Retail	3	6	2
Finance/Insurance	5	20	16
Service	3	4	8

In sum, while experience and education do not predict either the level or type of a woman's position, and age is highly related to advancement in that younger women are more likely to advance within their organization, type and size of an organization does predict both level and type of position. While one could argue that there is little variability in level of position because there are so few women executives in the study, the number of women in middle level and lower level positions is about equal. The fact that there are so few women executives argues for lack of opportunity. Consequently, it seems clear that younger women have more opportunity for advancement. But advancement in her organization is not related to level and type of position, but rather to where she works.

Clearly, there is more opportunity for women in finance/insurance companies, wholesale/retail and small service companies. But manufacturing organizations are opening to women in management, and have more women managers than we expected according to the 1965 predictions and our own expectations at the beginning of the study. Whether a woman advances is not related to size or type of company, salary increase or satisfaction. Further, level of education completed or in progress, area of specialization and whether she has completed a management training program are not related to size or type of company either. Irrespective of where she is employed, she is equally likely to pursue professional development through education. She is aware, however, of certain practical considerations in advancement, and these are reflected in her expectation of promotion. Women are more likely to expect promotion in larger organizations ($x2$ = 20.15, 6df, $p < .01$), but this is partly a function of the fact that she is more likely to be in lower level positions. Women in service organizations are less likely to expect promotion ($x2$ = 16.62, 8df, $p < .05$), but this is because most upper level managers and executives are in service organizations, and are at the top of the organizational heirarchy.

Table 45

Relationship of Opportunity, Support and Socialization to Careering and Professional Development Variables

	Age	Level of Education Completed/ Enrolled	Area of Specialization Completed/ Enrolled	Management Training Program	Professional Activities		Position Level	Position Type	Advancement	Salary Increase	Expectation of Promotion	Satisfaction
					Number	Breadth						
Size of Organization	x^2=10.60 16 df n.s.	x^2=12.46 9 df n.s.	x^2=10.76 6 df n.s.	x^2=4.61 3 df n.s.	x^2=18.96 12 df n.s.	x^2=17.62* 9 df	x^2=25.27*** 6 df	x^2=11.08* 3 df	x^2=8.53 12 df n.s.	x^2=10.21 9 df n.s.	x^2=20.15** 6 df	x^2=7.35 6 df n.s.
Type of Industry	x^2=1.15 4 df n.s.	x^2=12.79 12 df n.s.	x^2=6.81 8 df n.s.	x^2=1.39 4 df n.s.	x^2=15.06 16 df n.s.	x^2=26.99** 12 df	x^2=42.82*** 8 df	x^2=2.93 4 df n.s.	x^2=25.70 16 df n.s. (.06)	x^2=11.21 12 df n.s.	x^2=16.62* 8 df	x^2=8.84 8 df n.s.
Women Manager Colleagues in Organization	x^2=10.87* 4 df	x^2=2.94 3 df n.s.	x^2=3.15 2 df n.s.	x^2=.83 1 df n.s.	x^2=13.03* 4 df	x^2=13.69** 3 df	x^2=22.04*** 2 df	x^2=2.85 1 df n.s.	x^2=3.14 4 df n.s.	x^2=4.94 3 df n.s.	x^2=2.98 2 df n.s.	x^2=6.51* 2 df
Multiple Roles	x^2=19.84 12 df n.s.	x^2=8.04 9 df n.s.	x^2=10.77 6 df n.s.	x^2=8.16* 3 df	x^2=16.65 12 df n.s.	x^2=16.01 9 df n.s.	x^2=4.79 6 df n.s.	x^2=3.38 3 df n.s.	x^2=17.19 12 df n.s.	x^2=23.83** 9 df	x^2=4.26 6 df n.s.	x^2=8.24 6 df n.s.
Spouse's Occupational Status	x^2=8.71 8 df n.s.	x^2=2.74 3 df n.s.	x^2=.64 2 dt n.s.	x^2=.05 1 df n.s.	x^2=5.23 4 df n.s.	x^2=4.68 3 df n.s.	x^2=.26 2 df n.s.	x^2=.06 1 df n.s.	x^2=4.31 4 df n.s.	x^2=3.28 3 df n.s.	x^2=5.19 2 df n.s.	x^2=.02 1 df n.s.
Mother Employed	x^2=3.27 4 df n.s.	x^2=6.68 3 df n.s.	x^2=6.94* 2 df	x^2=.38 1 df n.s.	x^2=1.34 4 df n.s.	x^2=.80 3 df n.s.	x^2=5.29 2 df n.s.	x^2=1.08 1 df n.s.	x^2=3.56 4 df n.s.	x^2=2.25 3 df n.s.	x^2=1.25 2 df n.s.	x^2=1.39 2 df n.s.
Parents' Occupational Status	x^2=6.76 8 df n.s.	x^2=6.17 3 df n.s.	x^2=1.00 2 df n.s.	x^2=.00 1 df n.s.	x^2=5.89 4 df n.s.	x^2=1.62 3 df n.s.	x^2=1.55 2 df n.s.	x^2=2.59 1 df n.s.	x^2=1.88 4 df n.s.	x^2=1.53 3 df n.s.	x^2=3.22 2 df n.s.	x^2=1.78 2 df n.s.
Birth Order	x^2=4.49 4 df n.s.	x^2=3.88 3 df n.s.	x^2=1.37 2 df n.s.	x^2=.60 1 df n.s.	x^2=1.40 4 df n.s.	x^2=.96 3 df n.s.	x^2=.92 2 df n.s.	x^2=.01 1 df n.s.	x^2=1.63 4 df n.s.	x^2=8.03* 3 df	x^2=2.19 2 df n.s.	x^2=1.06 2 df n.s.

*$p < .05$
**$p < .01$
***$p < .001$

Level and type of position stand out as related to size and type of organization. The other careering variables (advancement, salary increase, and satisfaction are not. When we examine the breadth of professional activities the managers are engaged in, women are involved in more types of activities in smaller firms ($x2 = 17.62$, 12df, $p < .01$). This is because more upper level managers are employed there, such involvement is part of their job responsibilities, and upper level managers are found more in certain firms ($x2 = 2699$, 12df, $p < .01$). These women are more likely to have fewer women colleagues in their organization, since they are from smaller organizations, and it may be that involvement in both number of activities ($x2 = 13.03$, 4df, $p < .05$) and breadth ($x2 = 13.69$, 3df, $p < .01$) is part of job function. This may account for the relationship between number of women colleagues and involvement in professional activities. It may also be that women with fewer women colleagues are more likely to seek opportunities to meet women colleagues outside their own organization (*Time*, 1982).

Support for Careering and Professional Development

One major indicator of support is inferred from the number of women colleagues we interviewed in an organization. Another indicator is the number of other personal roles a manager has, and whether her husband is at the same or higher level of occupational status. First, we found that number of women manager colleagues in the organization does not relate to careering and professional development variables other than those just described, and those relationships seem more explained by size and type of an organization. We did find, however, that number of women manager colleagues is related to position level ($x2 = 22.04$, 2df, $p < .001$), with middle level managers having more colleagues, followed by lower level managers. While middle level and lower level managers are more likely to be in finance/insurance companies, it seems that in these companies, where there has generally been more opportunity for women, middle level managers are also likely to have more colleagues. Whether the fact that a manager is in a middle level position is accounted for partly by the support she has received from women colleagues is open to conjecture, but it is also interesting to note that the larger th number of women colleagues she has in the organization, the less satisfied she is with management as a career ($x2 = 6.51$, 2df, $p < .05$). Satisfaction is not related to size and type of organizations. Perhaps more issues related to lack of opportunity and advancement are surfaced and discussed when women have more colleagues and this leads to less satisfaction. But middle level managers are more likely found in finance/insurance, wholesale/retail, and service organizations. All of these types of organizations are considered to have more opportunities for women.

An important consideration for women in management is the extent to which they have multiple roles including wife and mother. The wife role can be expected to provide demands for homemaking, and the mother role for childrearing. Consequently, one would expect that there may be role conflict. Multiple roles may be expected to impede one's ability to devote adequate time to careering and professional development. Thus, demands of homelife and family responsibilities could be seen as barriers to effective socialization (Jerdee & Rosen, 1976) and performance on the job (Hall, 1972) particularly in a profession which traditionally has not accomodated itself to women and their multiple responsibilities.

Even though women do not have children, there are potential conflicts with dual career families, such that single women can be expected to have more time to devote to careering, should they choose to do so. We are not necessarily implying that problems that arise cannot be resolved, but rather that there is limited experience or expertise to draw on in either the professional or popular literature to assist either men or women to cope with dual careers or with career/family obligations.

What kind of support does the woman experience in her personal roles? First, 56 of the managers are married, and 47 percent of the group studied have children. Clearly, half the women in the sample have responsibilities outside their position at work. Further, number of roles is not related to age ($x2$ = 19.84, 12*df*, n.s.). Given the responsibilities these women have, do these added responsibilities affect their careering and professional development? The number of roles a women has outside her work is *not* related to any of the careering and professional development variables except for two. Single women are less likely to have completed a management training program ($x2$ = 8.16, 3*df*, $p < .05$), and single women with children, while they are at the same level of careering and professional development as those without children, are less likely to be rewarded by salary increases ($x2$ = 28.83, 9*df*, $p < .01$). This argues for a commonly understood circumstance for women with children who are single. They have more responsibilities, and perhaps have less support at home. Yet the single woman with children in our study did not show less advancement in their organizations, lower positions, less specialized education in management or lower levels of education. Perhaps the fact that she is single with children affects some other aspect of her responsibilities. It will be interesting to see if single women with children perform fewer of the competences.

How women in management are actually faring in resolving role conflicts is difficult for us to determine, but several observations by our female interviewer indicated that many of them experienced a great deal of frustration and conflict. The interviewer suggested that many seemed torn between their professional and personal lives, and that the demands of their professional role kept them from achieving personal satisfactions. Some seemed to communicate that they had given up a great deal to enter a nontraditional field, have a great deal of stress doing so and that the rewards were not commesurate with their expectations. Clearly, we believe there is a need for research that will clarify and explore the ability to engage in "structural role redefinition" (Hall, 1972), which was positively related to satisfaction with one's career in Hall's study.

We are inferring that spouses of equal or higher occupational status are able to be more supportive of women managers since they have more similar careering experiences in their own work than spouses whose socioeconomic status is significantly lower than that of the women manager's. As pointed out earlier, 75 percent of the married managers were of equivalent status, and no manager's spouse had a status score higher than hers. Twenty-five percent of the married managers were of higher status than their husbands. Yet spouse's status does not predict any of the careering or professional development variables.

Socialization Related to Careering and Professional Development

As reported earlier, managers in the study were more occupationally mobile compared to their mothers, and were more likely to be employed than their mothers. Further, managers were more likely to be of higher occupational status than their parents. Neither mother's employment nor parents' occupational status is related to any careering and professional development variables, except that managers whose mothers were employed while they were growing up are more likely to have specialized in the social sciences and traditional majors for women ($\underline{x}2 = 6.94$, $\underline{2df}$, $\underline{p} < .05$) such as nursing, teaching, etc.

Mothers were employed, for the most part, in traditional women's occupations, and daughters may have initially pursued those areas as well. Six of the 35 employed mothers were in nontraditional occupations (e.g. professor, pharmacist, postmaster, self-employed in business).

In regard to career modeling, it is interesting that 35 percent of the mothers were employed while these managers were growing up, a figure not that far from the 44 percent figure describing number of women with children working today. It is also interesting that those managers' mothers who were employed were at an occupational status equal to their spouses ($\underline{t} = -1.32$, $31\underline{df}$, n.s.), which mirrors the occupational status equality of most married managers in this study. Further, 66 percent of the managers had one professional parent, and the occupational category most represented (13 percent) was self-employed business. These findings argue for career modeling by parents while these managers and executives were growing up even though none of the relationships, except for one, are related to careering and professional development.

Finally, later born children report higher salary increases ($\underline{x}2 = 8.03$, $\underline{3df}$, $\underline{p} < .05$), which we are at a loss to explain, since we would have predicted the opposite. But then, percent salary increase is not related to advancement either.

Multiple regression was used to examine the percent of the variance contributed by several variables to four professional development and careering variables most likely to be indicators of present, visable "success" in management: advancement, type and level of position, salary increase and number of activities (Table 46). The list is somewhat truncated by the stricture against using categorical variables so we had to leave out expectation of promotion. Variables chosen were also identified because they were significantly related in prior analyses.

Age contributes most to advancement (22 percent). Type of organization contributes most to type and level of position (23 percent). Size of organization contributes most to number of activities (11 percent) and salary increase is contributed to little, if at all, by age, education or organization. Advancement and position are independent.

In sum, the clearest finding is that size and type of the organization contributes to position and the breadth of involvement outside the organization. There is a group of younger women who expect and do advance, and their expectations are not related to where they are working, except for practical considerations not likely related to opportunity.

Relating Organization and Manager Characteristics to Managerial Performance

In this section, we return to our description of the competences demonstrated by women managers. Terborg (1977) comments that research limited to correlations between self-report predictors and self-report criteria should be discouraged and that more attention must be focused on measurement of behaviors. We agree. Therefore, more attention will now be given to how the self-report data is related to competence.

There are three questions addressed in this section:

- Do careering and professional development variables discriminate "outstanding" performers?
- To what extent are the competences developmental, generic and holistic?
- Which organization and manager characteristics account for the variance in performance?

First, the McBer competence model is a description of abilities that discriminate outstanding from good performers. We wish to examine the extent to which careering indicators can be used to discriminate outstanding performers, as an alternative to McBer's peer nomination procedure and supervisor effectiveness ratings used to identify outstanding managers. Both methods were inappropriate for our procedures. We will see if a qualitative categorization of three levels of "outstanding" discriminates effective performance to a greater or lesser degree.

Second, to what extent are the competences developmental, generic and holistic? We examine the extent to which education, experience, level of current position, and organization make a significant contribution to the variance in performance. If a

Table 46

Percent of the Variance in Position, Advancement, Number of Activities and Salary Increase Contributed by Age, Education, Experience and Organization

Variables Dependent	Independent	cum R2	sR (I)
Advancement			
	Age	.221	.221
	Level of Education	.239	.018
	Size of Organization	.249	.011
	Type of Industry	.253	.003
Number of Activities			
	Age	.010	.010
	Level of Education	.044	.034
	Size of Organization	.157	.113
	Type of Industry	.171	.013
Salary Increase			
	Age	.022	.022
	Level of Education	.022	.000
	Size of Organization	.024	.002
	Type of Organization	.046	.021
Position Level/Type			
	Age	.000	.000
	Level of Education	.005	.005
	Advancement	.008	.003
	Size of Organization	.074	.066
	Type of Organization	.309	.234

competence is developmental and holistic, more experienced and better educated persons at higher position levels will demonstrate greater depth and breadth of competence. The more generic the competence, the less likely will performance be affected by setting or organization. That is not to say that performance is unaffected by the situation or position-related responsibilities and tasks. The behavior from which the competence is inferred may be quite different. But the inferred competences will be more similar.

A third purpose of this section is to examine the extent to which variables related to organization, careering and professional development, personal roles and socialization analyzed in the previous section account for the variance in performance. The previous analysis suggested that demonstrating the competences may be affected by opportunity, as well as experience and level of position. While advancement or experience seems unaffected by setting, the level of position one holds is related to setting. Thus, careering and professional development variables are expected to interact with opportunity for women in management. Multiple regression analyses examine the percent of the variance accounted for by these variables on the competence clusters and the breadth/depth competence score. ANOVAs will test the patterns of significant effects on each of the competences. The analyses are limited by sample size, and the lack of comparability of assumptions underlying the scale and/or categorization of the separate variables.

Managers and Executives as Outstanding Performers in Management

McBer's research methodology calls for a competence model built by identifying outstanding performers through peer evaluations, supervisor evaluations and other indicators of careering, and then identifying the competences that discriminate outstanding performers from a group of performers not identified as superior. Since we were unable to employ the peer evaluation method, and were also not able to collect supervisor evaluations of managerial performance, the data cannot be used to test the extent to which the competences discriminate average from outstanding performers in the McBer sense.

As discussed earlier, one can use various careering and professional development variables as discriminators of outstanding and good performers, but variables that relate to "success" in a particular organization may not necessarily be related to those that contribute to effective performance (Graves, 1980). In the present study, nomination of managers to be included was made by persons within the business community and women's professional management associations. We argued that these women were likely to be outstanding because nominators knew we were interested in interviewing outstanding women in management. One criterion for nomination then, is that the woman be known outside her company. While the managers themselves identified another 21 persons not on the original list, the interviewer made it clear to the interviewee that we were interested in interviewing effective managers. The fact that persons named were identified over and over again is further evidence of their position in the business and management community network. This nomination process was effective, and we are led to believe that the group is more likely to be homogeneous on criteria for "outstanding performer."

At the same time, we recognize that the paucity of women managers may lead to some managers being selected who were not necessarily outstanding. "Where are the women managers?" was the first question a nominator was likely to ask. There could be a potential bias in nominating a manager because she was a woman, and less attention could be give to effectiveness as a criterion. We did carefully screen the sample of women to be interviewed, and rejected 25 percent of the sample named as not meeting the criteria for manager. One criterion of particular importance was that she be beyond entry level in management, and that she be promotable. While we had intended to control for position level, and identify women in middle management only, identification of executives led us to include them in the sample. Further examination of the women's positions led to some discriminations in position level beyond the initial one of middle manager/executive to upper/middle/lower. Whether the variability in these finer discriminations predicts differences in performance is tested in this section.

These arguments for considering the women we interviewed as outstanding can be put to a further test. First, we examined the data from the Management Careering Questionnaire to see if the women indicated satisfaction with management as a career. Only one indicated dissatisfaction. However, the manager responded to the question after she had been told that she had been specially selected to be interviewed, and the expectation created in the interview would work against her claiming to be less than satisfied. Still, the group did discriminate on very satisfied and satisfied.

We decided to put our assmptions to a further test by a quantitative and qualitative judgment on the placement of each manager and executive on a continuum of "outstanding" based on the careering and professional development variables, and compare these categories to effective performance. Three levels of "outstanding" were identified through the following procedure, with 3 being the highest level and 1 being the lowest level.

First, any manager who had held more than one clerical position for more than five years was categorized "outstanding: level 1" as was any manager or executive with a nine percent average salary increase or less over the past three years. At that point, a Management Research Team member from the management faculty analyzed each manager's responses to the Management Careering Questionnaire for the remaining two-thirds of the sample. Data from the several careering and professional development variables were combined to make a judgment. Whether the manager had a college degree, if the degree was in a business major, if the degree was from a fairly well known institution, if the manager had completed a management training program, if she was satisfied with management as a career, the extent and quality of her professional activities, salary increases of 15 percent or more over the last three years and movement in career path were all considered. Career mobility was considered from two perspectives, that the manager was progressing up the organizational heirarchy at a steady pace, in no one position for more than three or four years, and that she was involved in a broad range of experience in the organization. Meeting these criteria would place a manager in "outstanding: level 2 or 3." The criteria that distinguished level 2 from level 3, the highest level, was breadth of expertise. A manager at "outstanding: level 2" may be vice-president with a successful career history, but she may be at the top of her career ladder because of a relatively narrow area of expertise. The "outstanding: level 3" managers were those who received promotions and salary increases more so than the rest, were active in their profession, and were still moving up in the organization. The "outstanding: level 1" managers were most often in positions with little chance of advancement. Some seemed to be "token" women managers, promoted from a clerical to a management position, which they had had for five or more years. Figure-heads of companies who had little to do with the operations of the organization were also categorized "outstanding: level 1."

Seventeen managers were categorized "outstanding: level 3;" 38 managers were placed in the "outstanding: level 2" category and 46 managers were placed in the "outstanding: level 1" category.

ANOVAs for all 18 competences and for competence clusters were performed to test for significant differences between the groups. ANOVAs were first performed using the three categories and then two categories, with level 2 and level 3, combined. There were no significant differences of any of the competences or competence clusters using either the two or three group qualitative classification scheme. Cluster breadth/depth score among the levels of "outstanding" is also nonsignificant ($\underline{F}$ = .97, 2$\underline{df}$, n.s.).

There are several possible reasons for these findings. One, the categories of "outstanding" may not be adequate discriminators of the group categorized. Another is that variables that discriminate persons who are considered at different levels of "outstanding" on careering and professional development variables are not those that account for effective performance. Still another is that differences interact with each other, and cancel out main effects. Still another is that age and type of organization affect opportunity, and controlling for opportunity will lead to finding relationships. We examine each of these variables independently in the following sections.

Still another explanation is that these managers and executives are homogeneous on "outstanding" criteria, and that the nomination process, as we suspect, did identify a group whose qualifications are more alike than they are different in the Milwaukee business and management scene.

The Developmental, Generic and Holistic Nature of Competence and Relationships Between Organization, Careering and Professional Development, Personal Roles and Socialization and Effective Managerial Performance

A first step in examining the relationships of various variable sets to managerial performance is to create a matrix of correlations between all variables and performance on each competence cluster separately, and then on the total cluster breadth/depth score (see Table 47). We know from our previous analyses of the interrelationships among these variables that some are inter-related. Next, we performed heirarchical, stepwise multiple regressions to examine the relationships between the variables significantly related to performance, given the questions we were studying. Finally, we performed a set of individual ANOVAs on each of the variables related to performance to create a more vivid picture of just where the variables effect the competences within each cluster.

Competence Cluster Breadth/Depth Score

In order to more accurately portray the breadth and depth of effective performance of the managers and executives, a competence cluster breadth/depth score was created. This score is a sum of the percent of competences demonstrated in each cluster across clusters. This is in contrast to the total competence score, which is the sum of competences demonstrated and gives an indication of strength. The competence cluster breadth/depth score controls for the fact that there are more competences within some clusters than others. Further, it considers the presence/absence of a competence rather than strength, and indicates depth of performance within a particular competence cluster as well as breadth of performance across clusters.

Table 47 shows the multiple correlations for each of the variables on the four competence clusters (Socio-Emotional Maturity, Entrepreneurial Abilities, Intellectual Abilities, Interpersonal Abilities) and the competence cluster breadth/depth score. We then identified those multiple correlations which were significantly related to the clusters and breadth/depth score. This information, together with data from our study of the interrelationships between the variables described in detail in prior sections, decided the order of the variables entered in the consequent heirarchical stepwise multiple regression analyses. We will discuss the meaning of the results from Table 47 in the context of the results from the heirarchical stepwise regression analyses.

In Table 48, variables were entered in the stepwise multiple regression analyses based on our assumption that competence is developmental and holistic, and that the best indicators are age; level of education completed/enrolled; area of specialization

Table 47

Multiple Correlations between Organization, Careering and Professional Development, Personal Roles and Socialization Variables and Performance of Competence Cluster Breadth/Depth

	Competence Cluster				
	Socio-Emotional Maturity	Entrepreneurial Abilities	Intellectual Abilities	Interpersonal Abilities	Total Competence Cluster Breadth/Depth
Variable	R	R	R	R	R
ORGANIZATION					
Size of Organization	.004	.226*	.286***	.070	.219*
Type of Industry	.231	.258	.290	.291	.332
Number of Women Colleagues in the Organization	.117	.260**	.286***	.058	.280***
CAREERING					
Age	.151	.079	.220*[1]	.053	.181
Position Level	.427***	.160	.279*	.299**	.416***
Position Type	.161	.242*	.045	.114	.235*
Salary Increase	.065	.034	.022	.093	.081
Promotion	.161	.113	.232*	.175	.244*
Advancement	.215*[1]	.101	.197*[1]	.046	.208*[1]
Satisfaction	.008	.132	.206*	.105	.157
Prior Management Experience in Another Company	.095	.018	.003	.054	.062

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[1] This bivariate correlation coefficient is negative.

*$p < .05$ **$p < .01$ ***$p < .001$

Table 47 continued

	Competence Cluster				
	Socio-Emotional Maturity	Entrepreneurial Abilities	Intellectual Abilities	Interpersonal Abilities	Total Competence Cluster Breadth/Depth
	R	R	R	R	R
EDUCATION					
Level of Education Completed/Enrolled	.064	.181	.107	.154	.130
(Master's only)	(.046)	(.181)	(.071)	(.099)	(.125)
Area of Specialization Completed/Enrolled	.064	.147	.260	.133	.167
Management Training Program	.213*	.001	.079	.238*	.181
Number of Professional Activities	.170	-.206*	.004	.067	.193
Breadth of Professional Activities	.083	.079	.145	.152	.051
PERSONAL ROLES					
Number of Roles	.144	.043	.093	.193	.115
Spouse's Occupational Status	.111	.004	.094	.017	.079
SOCIALIZATION					
Mother Employed	.134	.036	.103	.010	.098
Parents' Occupational Status	.106	.089	.021	.220	.161
Birth Order	.109	.025	.178	.074	.106

*$p < .05$

completed/enrolled; completed management training program; advancement (our best indicator of prior experience); and position level. For us, the best indicator to test our assumption that competence is generic is organization size and type. We entered the variables in this order per cluster, testing each correlation sequentially. If a particular variable was not significant, we removed it from the stepwise progression. Because one of our concerns is that we consider the effects of person as well as situation variables, we then entered these variables in the reverse order. The results from reversing the order are presented in the second half of Table 48. This allows the "situational" variables to make the largest contribution to the variance in performance, so that we can see if "person" variables representing careering and professional development contribute to the variance with situational variables controlled.

In Socio-Emotional Abilities, whether the manager has completed a management training program is significantly related to performance (sR2 = .045). Advancement adds a significant increment (sR = .058) and position level also adds a significant increment (sR2 = .118). In Entrepreneurial Abilities, organization type and size significantly contribute to effective performance (sR2 = .110). In Intellectual Abilities, age is significantly related but the correlation is negative (sR2 = .048), and advancement adds a significant increment (sR2 = .067). In the final cluster, Interpersonal Abilities, two variables contribute significantly, management training program (sR2 = .057) and position level (sR2 = .065). In cluster breadth and depth, advancement (sR2 = .043) and position level (sR2 = .151) contribute significantly to the variance.

These relationships indicate position level is significantly related to two of the four clusters, Socio-Emotional and Interpersonal Abilities, and to the cluster breadth/depth score, and strongly suggests that persons at higher positions perform more of the competences. Second, younger women are likely to demonstrate more Intellectual Abilities, and women who have completed a management training program are more likely to demonstrate more Socio-Emotional and more Interpersonal Abilities.

It is interesting to note that level of education completed/enrolled and area of specialization completed/enrolled was not related to the competences. Type and size of organization is related to Entrepreneurial Abilities and cluster breadth/depth only. Further, we know from previous analysis that position level is related to size and type of the organization.

We can conclude from these results that the competences are developmental and holistic in that position level is related to effective performance, but that this is not the case for Entrepreneurial Abilities. Further, age is related to Intellectual Abilities and Management Training Program is related to Socio-Emotional Maturity and Interpersonal Abilities. This is some evidence that Intellectual Abilities are demonstrated more by younger women, and this suggests that opportunity for demonstrating abilities may be playing a role here. The most interesting finding is that organization size and type is only

Table 48

Stepwise Multiple Regression of Variables Examining the Developmental, Generic and Holistic Nature of Competence

	Competence Cluster									
	Socio-Emotional Maturity		Entrepreneurial Abilities		Intellectual Abilities		Interpersonal Abilities		Total Competence Cluster Breadth/Depth	
Variable	R^2	sR^2	R^2	sR^2	R^2	sR^2	R^2	sR^2	R^2	sR^2
Age	-	-	-	-	.048	.048	-	-	-	-
Level of Education Completed/ Enrolled	-	-	-	-	-	-	-	-	-	-
Area of Specialization Completed/ Enrolled	-	-	-	-	-	-	-	-	-	-
Management Training Program	.045	.045	-	-	-	-	.057	.057	-	-
Advancement	.103	.058	-	-	.115	.067	-	-	.043	.043
Position Level	.221	.118	-	-	-	-	.122	.065	.194	.151
Organization Type and Size	-	-	.110	.110	-	-	-	-	-	-
---------- order of variables entered reversed ----------										
Type of Industry	-	-	-	-	-	-	-	-	.110	.110
Size of Organization	-	-	.051	.051	.082	.082	-	-	.146	.036
Position Level	.182	.182	-	-	-	-	.090	.090	.235	.089
Advancement	-	-	-	-	-	-	-	-	-	-
Management Training Program	-	-	-	-	-	-	-	-	-	-
Area of Specialization Completed/ Enrolled	-	-	-	-	-	-	-	-	-	-
Level of Education Completed/ Enrolled	-	-	-	-	-	-	-	-	-	-
Age	-	-	-	-	-	-	-	-	-	-

related to performance of Entrepreneurial Abilities which is our best evidence so far that when the variance due to careering and professional development variables is entered first, a significant increment due to organizations occurs only for Entrepreneurial Abilities and not for the total cluster breadth/depth score. This argues for the generic nature of the other two ability clusters and for Socio-Emotional Maturity.

We are, however, also interested in testing the assumption that performance is a product of the interaction between the person and the environment. While the multiple regression just performed controls for "person" variables, we need to be clear that position level does include the concept of function--that is, the demands of the job. While position level is an indicator of person abilities, it is also an indicator of situational variables. Clearly, position level is highly related to performance. Consequently, if we consider the organization and the function of the position as more descriptive of situational variables, and enter these first, a different picture emerges.

When we reverse the order of the variables, size of the organization is significantly related to two of the four clusters and the cluster breadth/depth score. Type of organization contributes to the cluster breadth/depth score as well (sR2 = .110). Neither organization variable is related to Socio-Emotional Maturity. The latter cluster can be considered more related to ego development than the other variables, and more due to person characteristics. First, size of organization contributes significantly to Entrepreneurial Abilities (sR2 = .051), to Intellectual Abilities (sR2 = .082), and to competence cluster breadth/depth score (sR2 = .036), with persons in larger organizations demonstrating more of the abilities. This may be due to increased opportunity to perform, in that the variety of demands may be greater. Together, size and type of the organization contribute a nonsignificant amount of the variance to Socio-Emotional Abilities or to Interpersonal Abilities, indicating that these competence clusters are more likely to be generic.

Position level is significantly related to Socio-Emotional Abilities (sR2 = .182) and to Interpersonal Abilities (sR2 = .090), with managers in higher positions more likely to demonstrate these competences. This is affirmed in the significant contribution to the competence cluster breadth/depth score (sR = .089), above that contributed by type and size of organization. When type and size of organization, and position level are controlled, then age, whether the person has completed a management training program, or advancement no longer contribute significantly to the variance.

In sum, age, education and experience (advancement) are related to performance of selected clusters, and advancement is related to the total cluster breadth/depth score. Position level is still related when these variables are entered first, as is organization type and size. When organization and position variables are entered first, age, education and advancement no longer contribute to variance in performance.

We conclude that person variables which contribute to advancement and to achieving a particular position may be very important to positioning one's self in the organization, and that once a manager is afforded the opportunity, she will more likely demonstrate competences demanded by the position. Size of the organization is important, perhaps because it offers greater opportunity for demonstrating a wide breadth and depth of competence. Larger organizations were more open to the study and more likely to have affirmative action programs.

While one could argue that it is person characteristics that are the cause of increased performance, and for achieving the position, advancement or experience does not contribute a significant increment when organization and position are considered first. Further, advancement is not significantly related to position level in the organizations we studied. Clearly, this is difficult to interpret. Completing a management training program, experiencing a breadth of positions in the organization, and spending a relatively shorter time in each position, are variables significantly contributing to performance. What is of interest, is that position level is strongly related to Socio-Emotional Maturity ($\underline{R} = .427$, $\underline{p} < .001$), whereas neither size nor type of organization are so related.

These findings suggest that despite the place of employment, women who are in higher positions are more likely to demonstrate competences related to ego development. Perhaps women who are strong on maturity are persisters who have managed to advance despite the lack of opportunity for women until recently. It is also clear that it is the middle managers that account for the increased performance of these competences. Why is this not also the case for the upper level managers? While the interviewer commented that the group of executive women were high on personal maturity, the interview did not seem as appropriate a mechanism for capturing the nature of their work and their particular abilities. Indeed, women in upper level management in this study may be unique. Their abilities may not be described best by the competence model in this study. This supports our earlier resolve to focus our study on middle level managers, and our hypothesis that women at the top are characterized by special abilities that account for reaching their position in the face of incredible odds, but that these abilities are not necessarily reflected in descriptions of managerial performance.

Having discussed the contributions of the several variables related to the developmental, holistic and generic nature of competence, it is also important to point out that on the whole, level of education, other than management training program, did not contribute to variance in performance. This is an interesting finding for management educators, who are concerned with the relationship of education to work performance following college. Another important finding is that level of education is not related to advancement in this study. Thus, level of education may not have contributed to greater opportunity for women to test out their education in a variety of positions in the organization. Advancement is not related to position level either. Nor is area of specialization completed/enrolled related to performance, except that having completed a management training program, as an area of specialization, is related to two clusters.

We now examine the several categories of variables separately (organization, careering, professional development, personal roles and socialization) as they relate to performance. We again use multiple regression techniques (see Tables 49, 50, 51 and 52), and this time, supplement these findings with results from ANOVAs on the separate competences (Table 53). (Means, standard deviations and F tests for Table 53 are included in Appendix I, Tables A-W.) This is directed toward identifying the competences in the several clusters that are related to the variable categories, and is important to our understanding of the competence model. Up until now, analyses have focused on the competence clusters in the McBer model, rather than on the clusters that emerged from our own factor and cluster analyses. The ways in which the variables affect each of the competences will aid in our interpretation of the final competence model that emerges in this study.

Our factor and cluster analyses results group competences differently than the four groupings of Socio-Emotional Maturity, Entrepreneurial, Intellectual and Interpersonal Abilities and the ANOVAs (Table 53) will assist in interpreting these analyses. It is important to note that the multiple correlations from the regression analyses are performed on the cluster breadth/depth scores (see Table 6) and the ANOVAs are performed on the competence score (see Figures 1 and 2). Consequently, the results will be somewhat different, since cluster breadth/depth considers the range and presence/absence of a competence within a cluster, and the competence scores only considers the number of competences demonstrated. Number of competences was used for the ANOVA analyses because each competence was to be examined separately. We were interested in strength of competence demonstrated in examining the separate competences, and breadth and depth applies to cluster scores rather than scores on individual competences. At the same time, it is important to refer to tables giving the distribution of the data in the subcompetences for a more specific interpretation of the results. Finally, post-hoc analyses of significant F tests were performed using Tukey A.

Organization

Size of organization is related to performance in that larger organizations show more breadth and depth of Entrepreneurial (sR2 = .051) and Intellectual Abilities (sR2 = .082), as well as total competence breadth and depth across clusters (sR2 = .036) (see Table 49). Type of industry contributes significantly to total cluster breadth/depth (sR2 = .110), but not to any of the clusters individually. Further, number of women colleagues in the organization does not contribute significantly to performance when type of industry and size of organization are entered first.

However, when we reverse the order of the variables in the Organization category, number of women manager colleagues in the organization does contribute significantly to the variance in performance of Entrepreneurial (sR2 = .067) and Intellectual Abilities (sR2 = .082), as well as total cluster breadth/depth (sR2 = .078). We know from earlier analyses that women in larger organizations are more likely to have women manager colleagues, and managers are less likely to have colleagues in service organizations. Still, it is difficult to attribute this relationship just to size of organization, because our interviewer observed that larger organizations were more likely to have vigorous affirmative action programs. However, when women manager colleagues is entered first, type of industry and size of organization do not contribute a significant increment to the variance in performance.

When we examine the results from the ANOVAs and post-hoc comparisons on each competence score (Table 53), we find that managers in larger organizations demonstrate more competences in the Intellectual Abilities cluster, namely, Diagnostic Use of Concepts and Specialized Knowledge. Managers in larger organizations also demonstrate more Development of Others and Management of Groups. Type of industry is also related to number of competences demonstrated. Managers in the Wholesale/Retail industries demonstrated more Entrepreneurial Abilities than managers in the other industries, and those in Service industries demonstrated the fewest competences in this ability cluster. Managers in Wholesale/Retail demonstrate more Efficiency Orientation, and those in Manufacturing and Service demonstrate less. Type of industry also is related to Interpersonal Abilities as a cluster, but when the means are examined, none is significantly greater than another. However, managers in Finance/Insurance industries demonstrate Development of Others more than managers in Service, Transportation/ Communication/ Utilities, and Manufacturing industries.

Results from the variable, number of women manager colleagues in the organization, do not mirror results from size of organization when we examine the strength of the competence, in contrast to results from the multiple regression analyses. In all cases, managers with more than one or two female manager colleagues demonstrate more Perceptual Objectivity, Efficiency Orientation, Logical Thought and Development of Others.

Clearly, managers with more women colleagues in larger organizations perform more of some competences, and these women are more likely to be in Wholesale/Retail and Finance/Insurance. These are also the types of industries that have shown the most opportunity for women, and larger organizations are more likely to have affirmative action programs. While this is also true for Service organizations, our group of high level executives were concentrated in small Service organizations, and we are led to believe that their abilities are not that well represented by the competence model.

Table 49

Stepwise Multiple Regression of Organization Variables on Performance of Cluster Breadth/Depth

	Competence Cluster									
Organization Variables	Socio-Emotional Maturity		Entrepreneurial Abilities		Intellectual Abilities		Interpersonal Abilities		Total Competence Cluster Breadth/Depth	
	R^2	sR^2	R^2	sR^2	R^2	sR^2	R^2	sR^2	R^2	sR^2
Type of Industry	-	-	-	-	-	-	-	-	.110	.110
Size of Organization	-	-	.051	.051	.082	.082	-	-	.146	.036
Women Colleagues in the Organization	-	-	-	-	-	-	-	-	-	-
---------- order of variables entered reversed ----------										
Women Colleagues in the Organization	-	-	.067	.067	.082	.082	-	-	.078	.078
Size of Organization	-	-	-	-	-	-	-	-	-	-
Type of Industry	-	-	-	-	-	-	-	-	-	-

Careering

Age

The regression analyses indicate that age is significantly related to the Intellectual Abilities cluster, with younger women demonstrating more breadth and depth of competence in this cluster than older women. In the ANOVAs per competence, significant relationships occur within Entrepreneurial Abilities and Interpersonal Abilities. The variable age was continuous in the regression analyses; for the ANOVAs we categorized age as follows: 26 to 34 years, 35 to 40 years, and 41 to 66 years. The category of older women were well into their careers if we date the push for women in management as beginning in 1972 as a rough estimate. Women in the 35 to 40 year range can be thought to benefit from the affirmative action push as can their younger colleagues. Thus, we would expect that women in the 35 to 40 year range would be more likely to demonstrate competence than the older or younger group of women. The older group have had less opportunity and the younger women are either entering management or have been in management only since 1972. We find that the women who are 35 to 40 years old demonstrate significantly more competence in Entrepreneurial Abilities, and this is accounted for by more Proactivity, the competence most indicative of seeing one's self as the cause of one's performance (Boyatzis, 1982). There is no difference between the older and younger group; each demonstrated significantly less Proactivity than the 35 to 40 year group. In the Interpersonal Abilities cluster, women in the 35 to 40 year range demonstrate significantly more of these abilities in total than older and younger women. This is accounted for by the difference in performing Development of Others and Use of Socialized Power. Women who are in the 35 to 40 and older group demonstrate significantly more Development of Others than the younger group, and these managers who are 35 to 40 years demonstrate significantly more Use of Socialized Power than the older managers.

It was our intent to include those careering variables that are the better predicators of current careering in a separate regression analysis. Thus, four variables, position level, position type, satisfaction and expectation of promotion were entered in a multiple regression in the order of current to future orientation of the variables (see Table 50). Salary increase was not entered because it showed no significant multiple correlation. Advancement and prior management experience in another organization were entered in a separate regression because both variables are experience variables and include information not descriptive of immediate careering.

Position level and type contribute significantly to each ability cluster and the total competence cluster breadth/depth score. Position level contributes significantly to each ability cluster and the total competence cluster breadth/depth score. Position level contributes to Socio-Emotional Maturity (sR2 = .182), Intellectual Abilities (sR2 = .078), Interpersonal

Table 50

Stepwise Multiple Regression of Current Careering Variables on Performance on Cluster Breadth/Depth

Current Careering Variables	Competence Cluster: Socio-Emotional Maturity		Entrepreneurial Abilities		Intellectual Abilities		Interpersonal Abilities		Total Competence Cluster Breadth/Depth	
	R^2	sR^2	R^2	sR^2	R^2	sR^2	R^2	sR^2	R^2	sR^2
Position Level	.182	.182	-	-	.078	.078	.090	.090	.173	.173
Position Type	-	-	.059	.059	-	-	-	-	.217	.044
Satisfaction	-	-	-	-	.115	.037	-	-	-	-
Expectation of Promotion	-	-	-	-	-	-	-	-	.260	.043
------ order of variables entered reversed ------										
Expectation of Promotion	-	-	-	-	.054	.054	-	-	.059	.059
Satisfaction	-	-	-	-	-	-	-	-	-	-
Position Type	-	-	.059	.059	-	-	-	-	.105	.046
Position Level	.182	.182	-	-	.120	.066	.090	.090	.260	.095

Abilities (sR2 = .090) and competence breadth/depth (sR2 = .173). Position type contributes to Entrepreneurial Abilities (sR2 = .059) and a significant increment to competence breadth/depth (sR2 = .044). Clearly, of the current careering variables, position level and type contribute most to the variance in performance, although persons who are very satisfied with management as a career contribute a significant increment to Intellectual Abilities (sR2 = .037) beyond position level, and even with position level and type entered first, expectation of promotion contributes a significant increment to the total competence cluster breadth/depth score (sR2 = .043).

When we reverse the variables, expectation of promotion contributes significantly to Intellectual Abilities (sR2 = .054), and with that variable entered first, satisfaction does not contribute significantly, although position level does (sR2 = .066). In fact both position level and type maintain their significant contributions with the variables reversed, and provide strong support for the contribution of position to performance in this study. It also indicates that persons who are expecting promotion are also likely to be higher on Intellectual Abilities, as are persons who are very satisfied with management as a career.

Advancement, the measure of experience that is drawn from the average number of years per position within the organization, contributes significantly to Socio-Emotional Maturity (sR2 = .046), Intellectual Abilities (sR2 = .039) and to the breadth/depth score (sR2 = .043) (see Table 51). Whether a manager has made a move from a management position in another organization does not contribute to performance in this study.

When we examine results from the ANOVAs (Table 53) using number of competences as the dependent variables rather than cluster breadth and depth, an interesting picture emerges. First, position level and type is most strongly related to Socio-Emotional Maturity. Staff rather than line managers are more likely to demonstrate Socio-Emotional Maturity, but it is position level which clearly singles out Accurate Self-Assessment, Perceptual Objectivity and Stamina and Adaptability. Middle level managers demonstrate more Socio-Emotional Maturity competences than upper and lower level managers. Further, middle level managers demonstrate more Accurate Self-Assessment than upper and lower level managers, and middle level managers demonstrate more Stamina and Adaptability than upper level managers. While position level is significant on the Entrepreneurial Abilities cluster, it is not related to either Efficiency Orientation or Proactivity in this cluster. Position level is related to Positive Regard, with upper and middle level managers showing more Positive Regard than lower level managers.

Two other variables that are indicators of a manager's current careering are expectation of promotion and satisfaction with management as a career. Satisfaction is not related to any of the performance variables, and we had few expectations that it would, since it is a two category variable and we have doubts about its use as anything but a gross discriminator. Expectation

Table 51

Stepwise Multiple Regression of Careering Experience and Professional Development Variables on Performance of Cluster Breadth/Depth

Competence Cluster

Careering Experience Variables	Socio-Emotional Maturity		Entrepreneurial Abilities		Intellectual Abilities		Interpersonal Abilities		Total Competence Cluster Breadth/Depth	
	R^2	sR^2	R^2	sR^2	R^2	sR^2	R^2	sR^2	R^2	sR^2
Advancement	.046	.046	-	-	.039	.039	-	-	.043	.043
Prior Management Experience in Another Company	-	-	-	-	-	-	-	-	-	-
Professional Development Variables										
Professional Activities (number)	-	-	.042	.042	-	-	-	-	-	-
Management Training Program	.045	.045	-	-	-	-	.057	.057	-	-
Area of Specialization Completed/ Enrolled	-	-	-	-	-	-	-	-	-	-
Level of Education Completed/ Enrolled	-	-	-	-	-	-	-	-	-	-

of promotion, like position level, does discriminate performance on two of the clusters and four competences. First, persons who expect promotion demonstrate more Intellectual Abilities described as Logical Thought. Second, they also demonstrate more Interpersonal Abilities, described by more performance of Concern with Affiliation and Management of Groups. Finally, persons who expect promotion are more likely to demonstrate Self-Control.

We have included one experience variable in the ANOVA analyses, namely, advancement. Persons who demonstrate greater advancement, that is, have an average of one year per position, show greater Socio-Emotional Maturity than persons who have an average of four, five, two or six years per position. The most clear cut finding is that persons with one year per position on the average show more Accurate Self-Assessment, and are more likely to demonstrate more Self-Presentation. This seems to indicate that persons who are higher on self-reflective skills and can present themselves well may be more likely to be promoted within the organization. Prior experience with another organization or other experience variables were not included in the ANOVA analyses. Percent salary increase was not included in the regression analyses because it did not contribute significantly to performance. But percent salary increase is significantly related to one competence, Use of Unilateral Power. Persons who experienced a 10 to 14 percent average salary increase over the past three years were significantly more likely to demonstrate Use of Unilateral Power than either zero to nine percent increase or higher percent increases. This finding is difficult to interpret. Graves (1980) found that salary increase was significantly related to variables that affect careering but not necessarily performance; that finding is supported by this study. It should be kept in mind, however, that percent salary increase was not highly related to other careering variables in this study either.

Professional Development

Multiple regression was performed on four Professional Development indicators in order of most to least recent: professional activities (number), management training program, area of specialization completed/enrolled, and level of education completed/enrolled (see Table 51). Persons with fewer professional activities are more likely to demonstrate Entrepreneurial Abilities (*s*R2 = .042). More interesting is that managers who have completed a management training program demonstrate more Socio-Emotional Maturity (*s*R2 = .045) and Interpersonal Abilities (*s*R2 = .057). Neither level of education nor area of specialization is significantly related to performance, consequently, the order of variables entered is not reversed.

The ANOVAs (Table 53) show that managers who were involved in greater breadth of professional activities demonstrated more Self-Control and were more likely to demonstrate Self-Presentation.

The results from ANOVAs on number of competences show a different picture for education from that drawn from multiple regression analyses. Both area of specialization completed/ enrolled and management training program are significantly related to performance. First, managers who have specialized in Social Science/Other show significantly greater Spontaneity and significantly fewer Intellectual Abilities than managers who have either an Arts/ Humanities major or who have specialized in Business/Technical fields.

When we examine the competences separately, persons with a Business/Technical specialization show more Diagnostic Use of Concepts. Area of specialization completed/enrolled is significantly related to Perceptual Objectivity with persons specializing in Business/Technical fields showing more of the competence than those in Social Science/Other and Arts/Humanities, but the post-hoc analysis does not identify one mean as significantly different from another.

Persons who have completed a management training program demonstrate significantly greater Stamina and Adaptability and Use of Socialized Power than those who have not completed such a program. This confirms a hypothesis raised in the section relating performance of competences and the perceptions of competences descriptive of outstanding performers (see Table 16). Two competences, Use of Socialized Power and Stamina and Adaptability were judged highly characteristic of outstanding performers in management, but few managers demonstrated these two competences. Since those with more specialized education, having completed a management training program, demonstrate these two competences more, perceptions of the managers may be correct. Persons in this study did think these two competences are important, but were not as likely to demonstrate them. Also, middle level managers were more likely to demonstrate Stamina and Adaptability and those in the 35 to 40 year range were more likely to demonstrate Use of Socialized Power. Since these managers also performed more competences, this is further support for these two abilities as descriptive of outstanding performers.

The other competences that were perceived as more characteristic of outstanding performers were performed at a level relative to their importance. Given this rationale, it seems that Positive Regard, while seen as characteristic of average performers, is perhaps more important to performance than the managers as a group perceived it to be, since middle and lower managers both demonstrated it more. Further, while managers perceived Development of Others to be of medium importance to outstanding performance, (it was performed to a greater extent by the managers in the Behavioral Event Interview, and persons in the 35 to 40 year range) it seems that Development of Others may have more importance than managers perceive it to be. Expressed Concern with Impact and Self-Control probably would not change in their categorization in Table 16.

Personal Roles

Since none of the variables in Personal Roles and Socialization contributed to performance, they were not entered in the multiple regression analysis. When we examine the results from the ANOVAs, we find that several of the variables show significant differences on scores from individual competences. First, number of roles does not discriminate performance for any of the competences. Women who are married are better at Management of Groups, and women with children show more Stamina and Adaptability. Given what we understand about the demands of women's roles, we can see how these abilities can develop. It is interesting that women whose husbands' occupational status is lower than theirs show greater Expressed Concern with Impact. This is difficult to interpret in the face of so few other significant relationships.

Socialization

If the manager's mother was employed, the manager will show more Spontaneity and Perceptual Objectivity. This may be related to our earlier observation that women with mothers working while they were growing up were likely to enter traditional occupations, and major in Social Science/ Other, since those with that area of specialization also show more Spontaneity. Women whose mothers were employed show more Perceptual Objectivity, which supports one concept in the world of working women, that working outside the home generates the need to be more objective. A manager whose parents were equivalent to her rather than lower in social status shows more Logical Thought and more Concern with Affiliation. Birth Order is not significantly related to any of the competences, but of course the most interesting finding related to birth order is that half the sample are first born children, which is significantly higher than the general population. Clearly, birth order may partially account for these women's entrance into a non-traditional field, as may the fact that a fairly large percent of these womens' mothers were employed while they were growing up, but these variables may not show relationships beyond careering to management performance.

Total Competence
Breadth/Depth Score

Finally, Table 52 presents oneway ANOVAs on total competence cluster breadth/depth score. Again, type of industry, position level and type, years in current position, expectation of promotion, and number of professional activities are significantly related to performance.

Table 52

One way ANOVA of Variables by Total Competence Cluster Breadth/Depth

Variables		Total Cluster Breadth/Depth			
		n	M	SD	F
ORGANIZATION					
Size of Organization	Small (1-899)	26	159.19	63.58	0.69
	Large (900 or more)	25	173.56	59.66	
Type of Industry	Manufacturing	26	162.04	70.92	3.04*
	Trans./Commun./Utilities	9	164.33	32.11	
	Wholesale/Retail	9	204.22	33.73	
	Finance/Insurance	41	199.27	48.05	
	Service	15	160.13	61.54	
CAREERING					
Age	26 to 34	36	182.44	54.57	2.21
	35 to 40	32	193.59	52.92	
	41 to 66	33	164.06	63.97	
Position Level	Upper Level	28	160.79	56.64	10.89***
	Middle Level	38	211.66	44.64	
	Lower Level	35	160.91	58.16	
Position Type	Staff	49	193.08	52.34	5.06*
	Line	52	167.62	60.82	
Years in Current Position	1 yr	30	197.00	50.29	3.28*
	2 yrs	22	167.46	57.30	
	3-4 yrs	22	196.23	49.38	
	5-30 yrs	27	158.00	65.64	
Salary Increase	0-9%	16	141.88	61.41	2.36
	10-14%	42	190.91	57.44	
	15-18%	23	188.52	44.36	
	20-40%	15	179.27	62.90	
	48-100%	5	172.80	62.86	
Expectation of Promotion	Expect Promotion	57	192.90	52.27	7.51**
	Do Not Expect Promotion	43	161.74	61.24	
Satisfaction with Management	Very Satisfied	80	184.61	53.58	2.66
	Somewhat Satisfied	20	161.05	72.82	

$*p < .05$
$**p < .01$
$***p < .001$

Table 52 continued

		Total Cluster Breadth/Depth			
		n	M	SD	F
PROFESSIONAL DEVELOPMENT					
Level of Education Completed	H.S./A.A.	39	180.13	60.72	0.63
	B.A.	48	175.40	57.27	
	M.A., Ph.D.	14	195.21	54.07	
Specialization Completed	Business/Technical	31	184.77	59.69	1.42
	Arts/Humanities	18	187.67	52.91	
	Social Science/Other	17	157.47	67.19	
Management Training Program	Management Training	66	188.17	59.26	3.65
	No Management Training	34	165.00	53.70	
Professional Activities	None	22	190.46	54.28	3.39*
	1	23	177.04	54.25	
	2	17	199.06	57.28	
	3	18	195.72	49.20	
	4-9	21	143.24	61.09	
PERSONAL ROLES					
Marital Status	Single	44	174.61	55.68	0.66
	Married	57	184.11	59.90	
Number of Children	Some	64	175.94	55.25	0.84
	None	37	186.95	62.67	
Occupational Status	Equivalent to Spouse	41	185.76	60.66	0.04
	Manager Higher Status	14	182.21	53.40	
SOCIALIZATION					
Occupational Status	Equivalent to Parent	36	191.36	52.46	1.85
	Manager Higher Status	64	175.20	59.50	
QUALITATIVE ASSESSMENT OF LEVELS OF OUTSTANDING					
Level 3		17	181.29	14.06	0.97
Level 2		38	178.13	9.19	
Level 1		46	181.00	8.90	

*$p < .05$
**$p < .01$
***$p < .001$

Table 53

Summary of Significant Relationships on the One Way ANOVA Analysis of Competences by Organization, Careering, Professional Development, Personal Roles and Socialization[1]

	Organization		
	Organization		Support at Work
CLUSTER/COMPETENCE	Size of Organization	Type of Industry[2]	Number of Women Manager Colleagues in the Organization
SOCIO-EMOTIONAL MATURITY			
Self-Control			
Spontaneity			
Perceptual Objectivity			1 or 2; 3 or more*
Accurate Self-Assessment			
Stamina and Adaptability			
ENTREPRENEURIAL ABILITIES		S; T/C/U; Mn; F/I; W/R*	1 or 2; 3 or more**
Efficiency Orientation		S; Mn; T/C/U; F/I; W/R**	1 or 2; 3 or more***
Proactivity			
INTELLECTUAL ABILITIES	Smaller; Larger**		
Logical Thought			1 or 2; 3 or more*
Conceptualization			
Diagnostic Use of Concepts	Smaller; Larger**		
Specialized Knowledge	Smaller; Larger*		
INTERPERSONAL ABILITIES		T/C/U; Mn; S; W/R; F/I**	
Self-Presentation			
Development of Others	Smaller; Larger*	S; T/C/U; Mn; W/R; F/I***	1 or 2; 3 or more*
Expressed Concern with Impact			
Use of Unilateral Power			
Use of Socialized Power			
Oral Communication			
Concern with Affiliation			
Positive Regard			
Management of Groups	Smaller; Larger**		

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[2] Type of Industry
Mn = Manufacturing
T/C/U = Transportation/Communications/Utilities
W/R = Wholesale/Retail
F/I = Finance/Insurance
S = Service

$^{*}p < .05$
$^{**}p < .01$
$^{***}p < .001$

[1] Categories are placed in order from left (lower values) to right (higher values) based on the size of their means. Underlining indicates significant differences between means tested via post-hoc comparison. All means underlined with the same line are not significantly different from each other.

Table 53 continued

	Careering			
	Age	Position		Experience
CLUSTER/COMPETENCE	Years Old	Level	Type	Years in Current Position
SOCIO-EMOTIONAL MATURITY		Lower; Upper; Middle***	Line; Staff*	
Self-Control				
Spontaneity				
Perceptual Objectivity		Lower; Upper; Middle*		
Accurate Self-Assessment		Upper; Lower; Middle*		
Stamina and Adaptability		Lower; Upper; Middle**		
ENTREPRENEURIAL ABILITIES	41-66; 26-34; 35-40*	Lower; Upper; Middle*		
Efficiency Orientation				
Proactivity	41-66; 26-34; 35-40*			
INTELLECTUAL ABILITIES				
Logical Thought				
Conceptualization				
Diagnostic Use of Concepts				
Specialized Knowledge				
INTERPERSONAL ABILITIES	41-66; 26-34; 35-40**			
Self-Presentation				
Development of Others	26-34; 41-66; 35-40*			5-30; 2; 1; 3-4**
Expressed Concern with Impact				
Use of Unilateral Power				
Use of Socialized Power	41-66; 26-34; 35-40*			
Oral Communication				
Concern with Affiliation				
Positive Regard		Upper; Lower; Middle*		
Management of Groups				5-30; 1; 2; 3-4*

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*$p < .05$
**$p < .01$
***$p < .001$

Table 53 continued

	Careering		
	Experience	Success	
CLUSTER/COMPETENCE	Advancement[2]	Percent Salary Increase	Expectation of Promotion
SOCIO-EMOTIONAL MATURITY	≥6; 2; 5; 4; 3; 1**		
Self-Control			No Promo; Promo*
Spontaneity			
Perceptual Objectivity			
Accurate Self-Assessment	≥6; 2; 4; 5; 3; 1**		
Stamina and Adaptability			
ENTREPRENEURIAL ABILITIES			
Efficiency Orientation			
Proactivity			
INTELLECTUAL ABILITIES			No Promo; Promo*
Logical Thought			No Promo; Promo*
Conceptualization			
Diagnostic Use of Concepts			
Specialized Knowledge			
INTERPERSONAL ABILITIES			No Promo; Promo*
Self-Presentation	3; 4; 5; 2; ≥6; 1*		
Development of Others			
Expressed Concern with Impact			
Use of Unilateral Power		15-18%; 0-9%; 20-40%; 48-100%; 10-14%*	
Use of Socialized Power			
Oral Communication			
Concern with Affiliation			No Promo; Promo*
Positive Regard			
Management of Groups			No Promo; Promo*

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[2] Advancement = number of years per position in the company.

*$p < .05$

**$p < .01$

***$p < .001$

Table 53 continued

	Careering	Professional Development		
	Satisfaction	Education		
CLUSTER/COMPETENCE	Satisfaction with Management as a Career	Level of Education Completed/Enrolled	Area of Specialization Completed/Enrolled[3]	Completed Management Training Program
SOCIO-EMOTIONAL MATURITY				
Self-Control				
Spontaneity			A/H; Bus/Tech; SocSci/O**	
Perceptual Objectivity			A/H; SocSci/O; Bus/Tech*	
Accurate Self-Assessment				
Stamina and Adaptability				No Mgmt Tr; Mgmt Tr**
ENTREPRENEURIAL ABILITIES				
Efficiency Orientation				
Proactivity				
INTELLECTUAL ABILITIES			SocSci/O; A/H; Bus/Tech**	
Logical Thought				
Conceptualization				
Diagnostic Use of Concepts			SocSci/O; A/H; Bus/Tech*	
Specialized Knowledge				
INTERPERSONAL ABILITIES				
Self-Presentation				
Development of Others				
Expressed Concern with Impact				
Use of Unilateral Power				
Use of Socialized Power				No Mgmt Tr; Mgmt Tr*
Oral Communication				
Concern with Affiliation				
Positive Regard				
Management of Groups				

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[3] Education - Area of Specialization
A/H = Arts/Humanities
Bus/Tech = Business/Technical
SocSci/O = Social Sciences/Other

Table 53 continued

CLUSTER/COMPETENCE	Professional Development		Personal Roles		
	Professional Activities		Multiple Roles		
	Number of Activities	Breadth of Activities	Marital Status	Children	Number of Roles
SOCIO-EMOTIONAL MATURITY					
Self-Control	1; 3; 4-9; 2; 0*	1; 2; 3; 0*			
Spontaneity					
Perceptual Objectivity					
Accurate Self-Assessment					
Stamina and Adaptability				No Children; Children*	
ENTREPRENEURIAL ABILITIES					
Efficiency Orientation					
Proactivity					
INTELLECTUAL ABILITIES	4-9; 1; 0; 2; 3**				
Logical Thought					
Conceptualization					
Diagnostic Use of Concepts	4-9; 0; 1; 2; 3*				
Specialized Knowledge					
INTERPERSONAL ABILITIES	4-9; 1; 2; 0; 3*				
Self-Presentation		0; 1; 2; 3*			
Development of Others					
Expressed Concern with Impact					
Use of Unilateral Power					
Use of Socialized Power					
Oral Communication					
Concern with Affiliation					
Positive Regard					
Management of Groups			Single; Married*		

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*$p < .05$
**$p < .01$
***$p < .001$

Table 53 continued

	Personal Roles	Socialization		
	Support at Home	Mobility/Career Modeling		Expectations for Achieving
CLUSTER/COMPETENCE	Spouse's Occupational Status	Mother Employed	Parent's Occupational Status	Birth Order
SOCIO-EMOTIONAL MATURITY				
Self-Control				
Spontaneity		No; Yes***		
Perceptual Objectivity		No; Yes*		
Accurate Self-Assessment				
Stamina and Adaptability				
ENTREPRENEURIAL ABILITIES				
Efficiency Orientation				
Proactivity				
INTELLECTUAL ABILITIES				
Logical Thought			Not Equivalent; Equivalent*	
Conceptualization				
Diagnostic Use of Concepts				
Specialized Knowledge				
INTERPERSONAL ABILITIES				
Self-Presentation				
Development of Others				
Expressed Concern with Impact	Equivalent; Not Equivalent*			
Use of Unilateral Power				
Use of Socialized Power				
Oral Communication				
Concern with Affiliation			Not Equivalent; Equivalent*	
Positive Regard				
Management of Groups				

*$p < .05$
**$p < .01$
***$p < .001$

DISCUSSION

The major purpose of this study was to identify competences that ensure effective performance on the job and determine the relationships among and between these competences to create a model of effective managerial performance. To this end, we studied the performance, perceptions, careering and professional development of 103 women managers and executives from 53 Milwaukee companies.

There is a long history of management selection and development programs aimed at developing the potential of managers. Studies have focused on identifying the characteristics of successful managers, and the characteristics that are generic across organizations and management levels. But most of these prior studies have focused on the potential of managers but not on their performance. Therefore, we used a recently developed performance measurement system to examine what managers actually do. Following from other researchers of managerial abilities (Argyris & Schon, 1974; Minzberg, 1975), we are researching behavioral outcomes rather than characteristics alone.

Description of the Competences Demonstrated

One of the first conclusions drawn from the competences demonstrated by managers in the performance interview is that no one competence category dominates. Women managers demonstrate competences across the broad spectrum of dimensions: Interpersonal, Intellectual, Entrepreneurial and Socio-Emotional. However, the managers interviewed were more likely to identify and discuss situations involving the first three categories than the latter. This may be due to the fact that a number of the competences that make up the socio-emotional maturity cluster (e.g., Spontaneity, Self-Control, Stamina and Adaptability) involve demonstrating behavior in situations which might be considered crisis or conflict situations. Perhaps the managers do not perceive many of the situations they face as crises and then do not describe their own behavior as mediating or crisis intervention related. Another interpretation might be that the managers chose not to relate incidents in which they had very little control. Still another interpretation is that this group of managers was fairly young, may still be developing these competences, and have yet to experience the kind of role that elicits them. Even so, 80 percent of the managers interviewed did perform some aspect of Socio-Emotional Maturity.

Contrary to some expectations, women managers were not more likely to demonstrate interpersonal skills than the other competence dimensions. An ordering of the competence clusters by the number of managers demonstrating each indicates that Intellectual Ability ranked first, Entrepreneurial ranked second while Interpersonal and Socio-Emotional Maturity ranked third and fourth. If, as Mintzberg (1975) and other management academicians have argued, the management job involves multiple roles (e.g., leader, negotiator, liaison, etc.), we might expect that successful managers would be required to demonstrate a broad range of abilities to perform their jobs competently. This seems to be the case with the managers in this study. Also, women managers, like their effective male counterparts, are not characterized as relying on one set of abilities to accomplish tasks, but demonstrate a balanced repertoire of skills and abilities.

Competences Demonstrated Most

A ranking of the number of times each competence was coded and of the number of managers who demonstrated each competence reveals nearly identical lists. Proactivity, Diagnostic Use of Concepts, Development of Others and Accurate Self-Assessment head the list. As with the breadth of competence clusters demonstrated, the first four competences are spread across the ability spectrum. The most commonly demonstrated competences present a picture of a manager who is an initiator, who doesn't wait to react to events (Proactivity), who thinks through problems and tries to apply past experience to interpret events, and is able to articulate a rationale or framework for analysis and consequent actions (Diagnostic Use of Concepts). The manager pictured is also one who is aware of the strengths and weaknesses related to the performance of the managerial job (Accurate Self-Assessment), and takes actions to improve and help others do the same (Development of Others).

Competences Demonstrated Least

Three competences coded less than 10 times each across the range of 522 situations are Spontaneity, Specialized Knowledge and Concern With Affiliation. The most striking finding is that Specialized Knowledge, that is, the manager's use of job-specific technical knowledge, did not appear in the performance interviews. Managers may take such skills for granted. When they discuss what they do, they describe other key abilities. Specialized Knowledge may be a necessary but not sufficient ability for effective performance.

Managers did not report actions that could be interpreted as Spontaneity. This competence, part of the Socio-Emotional Maturity cluster, is defined as acting on the basis of an immediate feeling or desire without premeditation or forethought, overtly expressing emerging feelings to others without thinking about their impact, or making snap decisions without regard for possible consequences. Spontaneity is a competence that is appropriate in some situations but not in others. In contrast, managers did show Self-Control, defined as holding back on an impulse to say or do something, replacing impulsive behavior with a more appropriate response, and personal sacrifice or denial of an impulse or need for the good of an overriding organizational need. Apparently, these managers, nominated as persons to be interviewed and so judged effective by peers, show Self-Control rather than Spontaneity in their actions.

A third competence demonstrated least was *Concern With Affiliation*. The definition of this competence includes spending time with co-workers or making friends with others when she has no task requirement in mind, or expressing an interest in what others think, do, or feel. Why was this ability not performed in the interviews? Many women in managerial positions may still feel relatively isolated. Of those interviewed, 37 percent were from organizations where no other woman manager was nominated; 14 percent were from those where one other was nominated; and 9 percent were from those where two others were nominated. At the same time, women managers who said they expected to be promoted reported more Concern With Affiliation than did managers who did not expect to be promoted.

Given the expection that women tend to be more concerned with others, more in need of interpersonal relationships and more nurturing, the fact that Concern with Affiliation was the least frequently demonstrated competence is somewhat surprising. However, this competence involves spending time with co-workers when no specific task requirements are in mind, making friends and expressing an interest in what others say or do. It may be that women managers, who are often the only woman in their position in the company and have few female counterparts, find such affiliation difficult or, at worst, suspect, if their peers are predominantly male. From another perspective, perhaps women find their primary affiliations outside the work environment, and so do not attempt to develop friendships at work as frequently as men. Still another explanation is that many women managers often have multiple roles (i.e., executive, wife, mother) and simply do not have the time for friendships at work. In the current study, however, single women did not perform more of the competences than did women with multiple roles, and the two groups did not differ on Concern for Affiliation.

Other Competences Demonstrated Frequently

Accurate Self-Assessment, *Efficiency Orientation* and *Expressed Concern With Impact* were all demonstrated frequently. *Accurate Self-Assessment* is of particular interest because it seems to be a key competence in the education model we created from the data. It is defined as describing and evaluating one's own performance in a situation in terms that reflect recognition of personal strengths and weaknesses. Accurate Self-Assessment includes taking action to develop or improve one's own abilities. This competence is reflected in the level of education completed by managers in the study. Of the managers studied, 20 percent had a college degree and were currently enrolled in graduate school; 42 percent had a college degree; another 15 percent had a two-year degree or were enrolled in college. Only 24 percent had a high school degree and were not enrolled in college. Managers who were currently enrolled were all enrolled in a business or technical field.

Further, it is clear that older women managers are paying as much attention to the need for more education as are younger women. The inverse relationship between age and education in management is disappearing as more and more women are seeking degrees in management, irrespective of age. Age is not related to completing a management training program. Managers are also as likely to complete a management training program regardless of their level of education, or whether they are currently enrolled in college.

A review of the interrelationships among professional development variables show that women in management in Milwaukee are seeking education through current enrollment in college or graduate school, completing management training programs, and involving themselves in professional activities not sponsored by the company, irrespective of the level of education they have. Those who have gone beyond college specialize in business and technical areas. A lack of statistical relationships among the various types of professional development we studied (education, completion of management training program, number and breadth of professional activities) is evidence for both the breadth and depth of their choices to improve themselves. They believe business and technical degrees are important for advancement and they are seeking to acquire them.

Two other competences demonstrated to a relatively high degree are Efficiency Orientation and Expressed Concern With Impact. Managers who perform Efficiency Orientation demonstrate behaviors such as efficiency in use of time, manpower, or resources; balancing task requirements and individual needs, matching people and jobs; and organizing materials or activities in new and better ways to accomplish tasks. They express a desire to do something better than has been done before and they are concerned with unique achievement. Expressed Concern With Impact is described as a need to persuade others, or a concern for the image or reputation of the manager or the business, product, or service with which the manager is involved. Managers are interested in their own advancement, expressed through their professional development activities. But they are also concerned with the advancement of the work they perform on the job.

Another comparison of interest in the competences performed is the managers' relative Use of Unilateral Power compared with Use of Socialized Power. Managers related situations where they used unilateral power over twice as often as they used socialized power. Many of these women managers were clearly able to use unilateral power when the situation demanded. But when we examine the way in which they used it, we find that all instances were giving directions or orders based on personal authority, rules, and procedures to obtain compliant behavior from others. There were no instances of the other aspects of unilateral power: giving directions or orders to others without soliciting input in situations where input would usually be solicited, and influencing aimed at getting compliant behavior that will reflect well on the manager, and not necessarily benefit the other person or task accomplishment.

Socialized power here is defined as building political coalitions or potential influence networks in order to accomplish a task, or influencing others in the direction of a win-win resolution of differences. While these managers are able to use unilateral power, they seem to be using more acceptable forms of it. And while they use unilateral power more than socialized power, those who have completed a management training program are more likely to use socialized power, which includes negotiating for win-win outcomes and political networking.

Competence Model of Effective Managerial Performance

How might these abilities be learned? One way to approach this question is to examine how these competences are linked to each other in a developmental sequence. Both educators creating sequential management curricula and managers planning their own professional development can benefit by knowing whether some competences are prerequisites for others.

As might be expected from its frequency rating, Proactivity was the competence most highly correlated with the other competences. Three competences, Accurate Self-Assessment, Diagnostic Use of Concepts, and Development of Others, showed seven significant correlations. On the other hand, a number of the competences were significantly related to only a few others.

Several of the factors and clusters group the competences together in ways that the original categories do not. For instance, Factor I and Cluster I group together Proactivity (Entrepreneurial), Diagnostic Use of Concepts (Intellectual Ability), Efficiency Orientation (Entrepreneurial) and Accurate Self-Assessment (Socio-Emotional Maturity). Such a grouping seems to indicate not that these competences are in the same category, but rather are in some way related in performance situations. The real contribution of the factor and cluster analyses is to suggest that competences must be learned and developed and/or demonstrated in relation to each other.

How might these abilities be learned? One way to approach this question is to examine how these competences are linked to each other in a developmental sequence. Both educators creating sequential management curricula and managers planning their own professional development can benefit by knowing whether some competences are prerequisites for others.

Several factor, cluster and path analyses were performed to develop the competence model in Figure 8. While our studies confirm that the competences are, in the main, independent of each other and do represent distinct skill combinations, the analyses suggest that some competences are best learned and developed in sequence.

This competence model is the capstone display of the study and suggests a number of important points worth further analysis. Key abilities seem to be *Accurate Self-Assessment*, *Diagnostic Use of Concepts* and *Development of Others*, judging from the way in which the other competences link into the path analysis of the competences. While *Proactivity* was demonstrated most frequently and may be an ability that most characterizes the managerial role, it is clear that a range of competences underlie this one. The manager who is an initiator (Proactivity) is building on the ability to make new relationships and patterns that result in new ideas (Conceptualization). The manager also relies on thinking through problems, applying past experiences to interpret events, and a rationale or framework to guide the manager's analysis and actions (Diagnostic Use of Concepts). This picture of the effective proactive manager rests on intellectual abilities.

On the other hand, the picture of the efficient manager rests on a positive regard for others and an ability to develop subordinates. The effective manager balances task requirements and individual needs, matches people and jobs, and does "something better" by identifying the steps, resources and constraints involved in achieving an outcome through Efficiency Orientation. But this competence is built on the manager's faith that others are capable of doing good things when given the chance and that people can change or improve (Positive Regard), and a range of managerial abilities that enable others to perform well (Development of Others). The latter competence includes assisting others to feel they can accomplish goals, giving performance related feedback, inviting subordinates to discuss problems affecting performance, making resources available to the manager's staff, and helping subordinates accomplish tasks while permitting them to take personal responsibility for doing so.

The fact that this group of women managers is characterized as concerned with developing others, and skill in utilizing the strengths of others to accomplish tasks is a departure from the go-it-alone approach suggested by Kanter (1979) and Hennig and Jardim (1977) as indicative of ineffective women managers. Kanter hypothesized that the ability to delegate and to develop others is, at least in part, a function of the amount of power inherent in a manager's position. If so, does the frequent demonstration of the developing others competence indicate that, on average, this group of women managers have fewer token positions than in the past?

It is also clear that Accurate Self-Assessment is a critical competence that should be developed early in one's management career. It calls for carefully evaluating one's own performance and taking action to develop or improve. A manager's ability to initiate rests on intellectual skills; ability to get the job done rests on people skills. Underlying these is self-assessment, the ability to learn from one's experience. This conclusion is especially consistent with studies of managerial decision-making. This research stream suggests that one of the most important ways in which managers can improve their decision-making ability is to be able to learn from their experience (Argyris & Schon, 1974; Huber, 1980). A logical next step that can be derived from the model is that those managers who do develop the ability to learn from their experience are then better able to develop competence in applying their learning to new situations. They may also develop an ability to formulate a rationale for one's analysis and actions at the same time.

Work Environment and Job Function

Work environment and job function are related to performance. Recognizing that managerial abilities are influenced by these factors is important to consider in drawing implications from this study.

Size of the organization, type of industry and job function (position level) are all factors that were related to both the range of competences and the range of behavioral descriptors performed. Generally, managers from larger organizations show more breadth and depth of Entrepreneurial and Intellectual Abilities. Type of industry (Service; Transportation/Communications/Utilities; Manufacturing; Wholesale/Retail; Finance/Insurance) affects Entrepreneurial and Interpersonal Abilities performed, and position level affects Socio-Emotional Maturity, Entrepreneurial and Interpersonal abilities demonstrated.

Clearly, performance of one's abilities is influenced by the context in which it occurs, and the job functions demanded by one's position. Such influence by the work environment, and the opportunities it provides, suggests that adaptability of one's abilities is critical for effective performance on the job. At the same time, there are a common set of broad competences that do cross situations and contexts.

Do Perceptions Match Performance?

Abilities Descriptive of Outstanding versus Average Managers

We have have just described what managers do to be effective. Would they choose these abilities if asked to judge those relevant to management, essential for hiring and training, and discriminating outstanding from average performers in management? For the most part, yes. The Management Performance Characteristics Inventory (Bishop, Mentkowski, O'Brien, Birney, Davies, & McEachern, 1980), a set of 162 statements of manager abilities generated by Alverno's Management Advisory Council and Management faculty, and drawn from an extensive review of prior studies of the managerial role, were submitted to these managers for their judgment.

Abilities Descriptive of Outstanding Managers

The instrument, using a multiple rating system, yielded a core of 12 abilities that over 50 percent of the managers said were essential for hiring or training and descriptive of outstanding managers. They are ranked from highest to lowest:

- Ability to maintain objectivity under stessful conditions
- Creativity
- Ability to make decisions under conditions of risk
- Ability to address conflict directly and tactfully
- Ability to present a clear position and press for a decision when required
- Ability to motivate others
- Ability to organize time effectively
- Willingness to consider interests and objectives of other parts of the organization in developing plans and actions
- Ability to take charge quickly
- Ability to function effectively in the context of conflicting information
- Ability to inspire others
- Ability to distinguish between what is important, or controllable, and what is not

Abilities Descriptive of Average Managers

The next set of abilities were agreed on as descriptive of average managers, and are also essential for hiring and training. They are ranked from highest to lowest and are those abilities more descriptive of entry level position requirements in management. They also form the basis from which abilities describing outstanding performance are developed.

- Trustworthiness
- Relevant technical skills
- Intelligence
- Ability to carry out directives from above appropriately
- Maturity
- Accountability for decisions
- Reliability, consistency
- Common sense
- Willingness to be a team player
- Ability to plan, document, and track the progress of programs
- Ability to think logically
- Self-confidence
- Ability to intepret data
- Ability to allocate work realistically
- Willingness to revise plans when necessary
- Ability to keep proper communication channels open
- Ability to use available technical knowledge in making decisions
- A belief in people

- Ability to formulate plans to achieve job objectives
- Ability to act as a representative of the company
- Ability to provide technical information to subordinates, peers, and superiors
- Ability to prioritize
- Ability to provide appropriate resources so the work may go on
- Ability to formulate realistic plans and goals

Comparing Perceptions and Performance

To compare perceptions and performance of the managers, we developed a comparable data base by categorizing each of the statements (characteristics) in the inventory according to the competences in the model. Perceptions of characteristics and performance of competences were categorized as high, medium or low given the distributions generated by the inventory and the interview.

In general, competences perceived to be more highly descriptive of outstanding performers are demonstrated by a larger proportion of managers in the performance interview (Proactivity, Conceptualization, Accurate Self-Assessment, Diagnostic Use of Concepts). Competences less highly descriptive of outstanding performers are shown by a smaller proportion of managers (Spontaneity, Logical Thought, Specialized Knowledge, Concern for Affiliation).

These results point out the importance of four competences for the practicing manager. First, Use of Socialized Power and Stamina and Adaptability are two competences that managers said were highly important to outstanding performance. Yet they were not demonstrated very often in the performance interview. Earlier, we noted that managers who had completed a Management Training Program were more likely to demonstrate Use of Socialized Power. Managers think this competence is very important, and it is related to completion of a management training program is this study.

We also note that Stamina and Adaptability, consisting of behaviors which call for control in high stress situations, maintaining long hours, attention to detail over prolonged periods, acting to reduce stress without it showing in performance, and changing a course of action to one more appropriate was perceived by managers as critical but was not as likely to show in the interview. Managers who completed a management training program were more likely to demonstrate Stamina and Adaptability (so were managers with children). Managers at the middle level of management compared with lower level managers also showed more Stamina and Adaptability. Apparently this is an ability that develops both through education and experience.

In contrast, two abilities managers identified as not that important for outstanding performance were demonstrated often by the managers in the performance interview, indicating that these abilities may be more important to effective performance than the managers realize they are. These competences are Self-Control and Positive Regard. Both are key abilities in the competence model.

We conclude that effective managers generally perform abilities they judge independently as characteristic of outstanding performers. In our view, this is strong evidence that these managers have a clear idea of what they think is important and that it shows on the job.

Implications for Management Education

There are a number of implications that can be drawn from the competence model, particularly for the education of managers. Chief among these is that management education be aimed at the whole person and that problems used in learning situations present a fuller context. Much of traditional management education has been focused on the development of particular technical skills, for example, the ability to develop a financial analysis of a new venture or the ability to effectively evaluate subordinates. True, Job Competence Assessment techniques used in this study do not provide a complete picture of the managerial role. Yet most of the situations described and the competences demonstrated present a more complex multi-dimensional canvas on which the manager must take action. Certain specific training is needed, but for the person who plans a career in management, an education that prepares the manager for the future will include learning experiences which require the manager to integrate a number of abilities and critically appraise his or her own performance.

This has been the conclusion of the most often cited critiques of management education (Katz, 1974; Livingstone, 1971). Yet, on the whole, management degree programs have been dominated by the technical competences and functional areas. Recently, however, the American Association of Collegiate Schools of Business, the business school accreditation body, has called for an output oriented evaluation model rather than an input oriented one. Such a shift in focus signals a need for an output oriented business curriculum as well. The competence model developed from this study can provide a framework for reviewing current curricula. For instance, if proactivity is a necessary prerequisite for developing other competences, should our course offerings and learning experiences be so dominated by analytic techniques that can only be used when problems have already been identified? Which courses will help develop problem finding as well as problem analysis? How can we help students develop abilities in implementing their recommendations as well as providing clearly articulated rationales?

The competence model presented in this study does not answer all the questions which are inherent in a shift to outcome.

oriented curricula. The determinants of effective performance were measured through nomination and self-report alone; there were no other independent measures of organization or manager effectiveness. The model does not provide a complete catalogue of managerial performance, nor a complete picture of the relationship between performance and the opportunity to perform. Any competence model like this one can be somewhat circular because it yields abilities that are constructs that are harder to link to situational factors, even though the constructs are grounded in situational behavior. Yet this is precisely the characteristic of the model that enables a qualitative comparison by faculty between management program outcomes and those demonstrated by effective professionals that are descriptive of effective performers and that are more likely to cross situations and organizations. The model does suggest that there is a certain developmental sequence that might be used as a guide for developing learning experiences. It also reinforces the need for an experiential component to management education and a focus on problems, at least at the advanced levels, which are more complex, contextual and encourage the learner to integrate and synthesize learning.

Alverno faculty have developed an educational process that can be extended to management development programs. This study shows that the abilities on which the Alverno program is built mesh with abilities demonstrated by effective women managers on the job. Further, the study provides a cadre of material that can build realistic and relevant instructional experiences for management students in the classroom. Coupled with the internship program for students that allows for supervised work experience during college, such instructional materials and the abilities they teach toward in the classroom should further strengthen the management graduate's ability to perform in a managerial position after college.

SUMMARY

Three major outcomes result from this study of managers and executives.

- A competence model of effective managerial performance that can serve to improve management education programs
- A pool of over 500 behavioral examples set within particular contexts that can serve as instructional tools, assessment criteria and feedback for management students
- Better advice for women students seeking examples of careering and professional development and how it relates to effective performance in the managerial role

Several results emerge from this study.

- Women managers demonstrated intellectual and entrepreneurial abilities to the same degree as they demonstrated interpersonal abilities
- Some personal maturity and intellectual abilities seem to precede the development of interpersonal and entrepreneurial abilities, and suggest the importance of education in creating effective managers
- Abilities effective managers say are critical to outstanding performance are generally the ones they perform in day to day situations
- Both work environment and job function affect the extent to which these abilities are demonstrated
- A competence model can be developed to describe the performance of effective managers

A major conclusion of this study is that no one competence dominates the performance of these managers. They demonstrate competences across the broad spectrum of dimensions: interpersonal, intellectual, entrepreneurial and socio-emotional. The managers interviewed were more likely to identify and discuss situations involving the first three competence clusters. This may be due to the relatively young age of the managers studied and their more recent entry into the managerial role.

Contrary to some expectations, women managers were not more likely to demonstrate interpersonal skills than intellectual or entrepreneurial ones. If the management job involves multiple roles (e.g., leader, negotiator, liaison, etc.), as some management academicians have argued, we might expect that effective managers would be required to demonstrate a broad range of abilities to perform their jobs competently. Women managers in this study, like their effective male counterparts, are not characterized as relying on one set of abilities to accomplish tasks, but demonstrate a balanced repertoire of skills and abilities.

When we examine relationships between these abilities, several important ones emerge. Accurate self-assessment is a key competence to be developed early in a manager's career. The effective manager initiates action, but actions rest on intellectual skills. The effective manager performs efficiently, but efficiency is built on positive regard for others and ability to develop subordinates. Just as a manager's ability to initiate rests on thinking skills, ability to get the job done rests on people skills. But managerial performance is related to size of the organization, type of industry, and position level. Abilities demonstrated are related to the opportunities and demands of the work environment and the manager's role in it.

Abilities these managers judge as critical for outstanding performance are generally what they do. Two abilities that are important according to the managers and that did not appear as often in performance as they perhaps should are using networking and negotiating win-win situations. Further, the managers showed less stamina and adaptability, personal characteristics that develop through education and experience. Yet managers agreed these were important. Demonstrating self-control and positive regard for others, abilities demonstrated often, are apparently more critical to effective managerial performance than the managers realize they are.

There are a number of implications to be drawn from the competence model for the education of managers. Chief among these is the suggestion that management education be aimed at the whole person and that problems used as practice in learning situations present the fuller context of the managerial role.

Much of traditional management education has been focused on functional skills, for example, the ability to develop a financial analysis of a venture or the ability to effectively evaluate subordinates. Yet specialized knowledge did not play a critical or decisive role in the situations described by these effective managers. Most of the situations described present a complex multi-dimensional canvas on which the manager must take action.

Certainly specific training is needed for any entry level position in management, but for the person who plans a career in management, an education that prepares for the future will include learning to integrate a number of abilities, to test them out in a range of actual work situations, and to critically appraise one's own performance.

The fact that size of organization, type of industry and position level were determinants in the range and depth of competences demonstrated suggests how critical the kind of work environment is for opportunity to demonstrate managerial abilities, and the kind of abilities required. Teaching for adaptability across a range of contexts is clearly called for, and adaptability is one of the main outcomes descriptive of liberal arts graduates.

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APPENDIX I

Tables of Means, Standard Deviations, and F's for One Way ANOVAs of Clusters and Competences by Organization, Careering, Professional Development, Personal Roles and Socialization Variables

APPENDIX II

Examples of Correspondence with Companies and Managers Inviting Their Participation, Expressing Thanks, and Introducing Them to the "Final Report Summary for Participants."

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LETTER A

DATE

Dear :

In recent years, Alverno College has developed a new area of study for its students--that of management. We have done so because of the increasing interest of women in developing careers in management, and because area firms often contact us as they seek qualified women for management positions. We currently have 300 students in our management program.

Consultants assisted us in the early stages of shaping our program. Now that it is underway, we wish to evaluate the extent to which it is effective in preparing women to meet the needs of employers and the demands of the professional management world. We wish to again incorporate the ideas of professional managers into our ongoing curriculum development.

Consequently, we have initiated a major research project, funded by the National Institute of Education, to describe the management abilities which characterize outstanding women managers. As a first step, we asked several members of the Milwaukee business community to identify managers they believe should be included in the group to be interviewed. Alverno's Management Advisory Council, made up of Milwaukee managers and executives, played a major role in identifying a group of women managers who could be a source for us in better understanding the abilities that Alverno should "teach toward" in preparing its graduates.

Among the managers we have identified are Ms.__________________, Ms.______ _______________, and Ms.___________________, all of whom have management positions in your company. Before proceeding, however, we wish to obtain your permission to contact these women and to interview them.

If you agree to assist us by giving this permission, Ms._____________, Ms._______________, and Ms._______________ could then be contacted and asked if they are willing to participate. If they agree, we would ask them in the interviews to generally describe their responsibilities, to talk to us about what they actually do on the job, and to describe abilities they think lead to effective performance. We would also appreciate your permission to contact and interview any other women in middle management employed by your company.

The names of both the interviewee and her company will be held in strict confidence and the interviews would in no way be specifically linked to the (COMPANY'S NAME). However, we welcome the opportunity to share the findings from the entire project with your firm.

The project is being conducted under the direction of Dr. Marcia Mentkowski, an educational psychologist who heads our Office of Research and Evaluation, and Dr. James Bishop, a sociologist who is a Researcher for the Office. They are assisted by Elizabeth Davies and Mary Ellen DeHaven.

Dr. Bishop will be contacting your office by phone during the comming week for your response. If you are willing, Dr. Bishop will then set up an appointment to work out details with your representative and to answer further questions.

Your cooperation with our project would contribute to further developing the capabilities of Alverno College to serve Milwaukee as well as aiding a major educational research effort with national impact. We see this as an important opportunity for practicing professionals to assist in the development of future colleagues and to contribute significantly to the ability of higher education to respond to professional needs.

I do appreciate your time and consideration.

Sincerely,

Sister Joel Read
President

SJR

LETTER B

DATE

Dear Ms. :

Recently, you were kind enough to be interviewed by Mary Ellen DeHaven for our study of the abilities used by women in management, sponsored by the National Institute of Education. At the time of the interview, Ms. DeHaven left you a checklist (titled "Management Performance Characteristics Inventory") to fill out at your convenience and mail back to us. This checklist is an important part of our study as it gives us the opportunity to check firsthand what practicing managers like yourself think about the nature of your work. In this sense, of gaining information directly from those most involved, the checklist is as important to our research purposes as the interview itself.

I realize how difficult it is in a position like yours to find time for the necessary obligations, not to mention those that have little direct impact on your daily work. However, we feel that you and others in your field are necessary sources of information for improving the educational process in management programs. Therefore, I would respectfully like to urge you to complete the inventory and return it in the self-addressed, stamped envelope provided. Should you need another copy of the inventory, I am enclosing one for your convenience.

I would also like to take this opportunity to thank you for your support in this project and for your willingness to help us in our efforts to determine the abilities and skills demonstrated by women in management. We will be sending you and your company a copy of our final report to the National Institute of Education as soon as it is available. If for some reason you have already filled out the checklist and our correspondence has "crossed" in the mail, please accept my apologies for this additional letter. Thank you again. We look forward to sending you the final report.

Sincerely,

James M. Bishop, Ph.D.
Researcher

JMB
Enclosures

LETTER C

DATE

Dear Ms. :

In 1980, you contributed to a major research project conducted jointly by Alverno's Office of Research and Evaluation and Department of Business and Management. Enclosed with this letter is an executive summary of the findings from the study prepared especially for its participants. Our goal was to create a model of the abilities of the effective manager, and to incorporate these abilities of the practicing professional into our ongoing curriculum development, so we graduate women with these abilities. The study also helped us evaluate the extent to which our management program is effective in preparing women to meet the needs of employers and the demands of the professional management world.

In all, we interviewed 103 women managers and executives who had been nominated as effective personnel. These women represented 53 Milwaukee organizations in the private sector. Their names and their companies, of course, continue to be held in strictest confidence.

We asked managers to relate to us a set of specific examples of their performance. They also identified a set of management abilities critical to outstanding performance. From this information, we created a model of effective managerial performance which is contained in the report summary. We plan to incorporate its findings in our curriculum by creating case studies, criteria for assessment of abilities, and better definitions of these abilities for teaching purposes.

We appreciate your participation and hope that this report, mailed both to company presidents and managers who participated, will be helpful. The technical report is being prepared for publication. We will send you a reprint when it is published.

Your cooperation with this project contributes to further developing the abilities of Alverno College to serve Milwaukee as well as aiding in a major educational research effort with national impact. As an indication of current interest in these critical managerial abilities, you may be interested to know that the American Management Association is incorporating such abilities in their graduate management program. We see your participation as another way practicing professionals assist in the development of future colleagues. And you also contributed significantly to the ability of higher education to respond to professional needs.

Sincerely,

Marcia Mentkowski, Ph.D.
Director of Research and Evaluation

MM
Enclosure: "Final Report Summary
For Participants"

LETTER D

DATE

Dear :

In 1980, your company gave permission for a manager or managers in your company to contribute to a major research project conducted jointly by Alverno's Office of Research and Evaluation and Department of Business and Management. Enclosed with this letter is an executive summary of the findings from the study prepared especially for its participants. Our goal was to create a model of the abilities of the effective manager, and to incorporate these abilities of the practicing professional into our ongoing curriculum development, so we graduate women with these abilities. The study also helped us evaluate the extent to which our management program is effective in preparing women to meet the needs of employers and the demands of the professional management world.

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Sincerely,

Sister Joel Read
President

SJR
Enclosure: "Final Report Summary for Participants"

MANAGEMENT PERFORMANCE CHARACTERISTICS INVENTORY

James Bishop
Robert Birney
Marcia Mentkowski
Elizabeth Davies
Kathleen O'Brien
William McEachern

Office of Research & Evaluation/Department of Business & Management
ALVERNO COLLEGE

Funded by a grant from the National Institute of Education:
Careering After College: Establishing the Validity of Abilities
Learned in College for Later Success
(NIE–G–77–0058)

Principal Investigators:
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ACKNOWLEDGEMENTS:

The format for this inventory was adapted from Sheila Huff and Maureen Webster. Job Competencies Inventory for On-Line Human Service Work. Washington, D.C., National Center for the Study of Professions, 1979.

Development of the inventory has drawn upon Robert A. Ramos. Management Abilities and Activities. Paper presented at the Executive Study Conference (Analysis of Management Jobs: Research and Application) Cleveland, Ohio, May 1979.

We wish to acknowledge George O. Klemp, Jr., McBer and Company, Joseph L. Moses, American Telephone & Telegraph Company, Paul S. Pottinger, National Center for the Study of Professions and Alverno's Management Advisory Council, for their assistance in developing the inventory.

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INSTRUCTIONS:

Taking one group of items at a time (because we have found that responding is easier and more thoughtful that way):

FIRST Read all items in the group and ask yourself: Based on my work experience, is this item relevant to the work I have in mind? If it is not relevant, then cross it out. You can then skip all crossed out items in steps two and three. When you have done this for all the items in a group, then . . .

SECOND Look at all the items in a group that are not crossed out and ask yourself in each case: Based on my work experience, is this quality absolutely essential to consider in hiring or training a person for a position like my own? If you think that an item represents an absolutely essential quality, please circle the E. When you have considered all the items in the group, then . . .

THIRD Think about the managers you know who are really outstanding performers and those who are average. Look again at all the items in the group that are not crossed out, and ask yourself in each case: Does this distinguish between outstanding and average performers in management? If you judge that the majority of reasonably competent or average performers have this quality, circle A only. If, on the other hand, you think that only outstanding performers have this quality, circle 0 only. PLEASE DO NOT CIRCLE BOTH THE A AND THE O.

When you have answered the three questions for one group of items, please move on to the next group.

	FIRST: Cross out any item that is not relevant to management performance.	SECOND: If this is absolutely essential to consider for hiring or training a person in your present position, Circle Ⓔ	THIRD: (Circle A or O) If average performers in management have this, Circle Ⓐ	If only outstanding managers have this, Circle Ⓞ
			(DO NOT CIRCLE BOTH)	
1.	Ability to admit errors in decision-making	E	A	O
2.	Ability to distinguish between what is important, or controllable, and what is not	E	A	O
3.	Ability to use sanctions effectively	E	A	O
4.	Ability to monitor the activities of others to gain needed information	E	A	O
5.	Ability to defend decisions	E	A	O

6.	Ability to deal effectively with the discrepancy between the "real" and the "ideal"	E	A	O
7.	Ability to motivate others	E	A	O
8.	Self-confidence	E	A	O
9.	Ability to relate facts from diverse sources to yield conclusions	E	A	O
10.	Ability to judge trends effectively	E	A	O

11.	Orientation to action, not a dreamer	E	A	O
12.	Ability to identify inconsistencies, subtle relationships in information	E	A	O
13.	A primary loyalty to the employer or company	E	A	O
14.	Willingness to consider interests and objectives of other parts of the organization in developing plans and actions	E	A	O
15.	Ability to ensure that personnel and positions are properly matched	E	A	O

	FIRST: Cross out any item that is not relevant to management performance.	SECOND: If this is absolutely essential to consider for hiring or training a person in your present position, Circle Ⓔ	THIRD: (Circle A or O)	
			If average performers in management have this, Circle Ⓐ	If only outstanding managers have this, Circle Ⓞ
			(DO NOT CIRCLE BOTH)	
16.	Ability to negotiate decisions with a variety of others	E	A	O
17.	Ability to work toward long-range outcomes	E	A	O
18.	Ability to avoid failure situations	E	A	O
19.	Ability to work effectively with the management chain (up and down) to resolve problems or contentions	E	A	O
20.	Ability to cope with change or setbacks	E	A	O

21.	Ability to prioritize	E	A	O
22.	Ability to manipulate others through interpersonal skills	E	A	O
23.	Trustworthiness	E	A	O
24.	Ability to identify recurrent patterns in relationships	E	A	O
25.	Willingness to promote development of subordinates	E	A	O

26.	Ability to plan, document, and track the progress of programs	E	A	O
27.	Orientation toward results	E	A	O
28.	Ability to perform under less than optimum conditions	E	A	O
29.	Ability to organize unstructured situations and see the implications of that organization	E	A	O
30.	Ability to speak well	E	A	O

	FIRST: Cross out any item that is not relevant to management performance.	SECOND: If this is absolutely essential to consider for hiring or training a person in your present position, Circle Ⓔ	THIRD: (Circle A or O) If average performers in management have this, Circle Ⓐ (DO NOT CIRCLE BOTH)	If only outstanding managers have this, Circle Ⓞ
31.	Strong need for affiliation	E	A	O
32.	Intelligence	E	A	O
33.	Ability to make decisions under conditions of risk	E	A	O
34.	Ability to identify and evaluate alternatives in solving problems	E	A	O
35.	Ability to coordinate multiple organization levels	E	A	O

36.	Ability to act as a model for desirable behavior as a way of influencing outcomes	E	A	O
37.	Ability to balance customer or client demands against company loyalty	E	A	O
38.	Ability to adapt to norms of varying situations	E	A	O
39.	Ability to maintain objectivity under stressful conditions	E	A	O
40.	Willingness to continue one's education	E	A	O

41.	Willingness to promote one's own accomplishments	E	A	O
42.	Ability to keep proper communications channels open	E	A	O
43.	Ability to balance expedient against humanistic goals	E	A	O
44.	Ability to give orders and directions unilaterally	E	A	O
45.	Ability to act as a representative of the company	E	A	O

	FIRST: Cross out any item that is not relevant to management performance.	SECOND: If this is absolutely essential to consider for hiring or training a person in your present position, Circle Ⓔ	THIRD: (Circle A or O)	
			If average performers in management have this, Circle Ⓐ	If only outstanding managers have this, Circle Ⓞ
			(DO NOT CIRCLE BOTH)	
46.	Ability to promote cooperation	E	A	O
47.	A drive for prestige, mobility	E	A	O
48.	Ability to allocate work with a sensitivity to group cooperation and productivity	E	A	O
49.	Ability to set limits for subordinates	E	A	O
50.	Ability to interpret data	E	A	O
51.	Ability to predict outcome or impact	E	A	O
52.	Ability to empathize	E	A	O
53.	Ability to write well	E	A	O
54.	Ability to separate significant from insignificant elements in complex situations	E	A	O
55.	Ability to make decisions which cause no one loss of face	E	A	O
56.	Ability to influence others	E	A	O
57.	Ability to take charge quickly	E	A	O
58.	Luck (being in the right place at the right time)	E	A	O
59.	Respect for authority	E	A	O
60.	Ability to think logically	E	A	O

	FIRST: Cross out any item that is not relevant to management performance.	SECOND: If this is absolutely essential to consider for hiring or training a person in your present position, Circle Ⓔ	THIRD: (Circle A or O) If average performers in management have this, Circle Ⓐ	If only outstanding managers have this, Circle Ⓞ (DO NOT CIRCLE BOTH)
61.	Ability to listen critically	E	A	O
62.	Ability to organize time effectively	E	A	O
63.	Ability to reassess priorities	E	A	O
64.	Ability to interpret effectively	E	A	O
65.	Ability to relate data to problem-solving activity	E	A	O

66.	Ability to allocate work realistically	E	A	O
67.	Willingness to revise plans when necessary	E	A	O
68.	Ability to form relationships	E	A	O
69.	Ability to anticipate the future	E	A	O
70.	Ability to develop alternatives	E	A	O

71.	Ability to provide appropriate feedback to subordinates, peers, and superiors	E	A	O
72.	Ability to balance long-range against short-range goals	E	A	O
73.	Good memory	E	A	O
74.	Ability to exercise leadership skills	E	A	O
75.	Strong sense of identity	E	A	O

	FIRST: Cross out any item that is not relevant to management performance.	SECOND: If this is absolutely essential to consider for hiring or training a person in your present position, Circle Ⓔ	THIRD: (Circle A or O) If average performers in management have this, Circle Ⓐ (DO NOT CIRCLE BOTH)	If only outstanding managers have this, Circle Ⓞ
76.	Ability to provide appropriate resources so that the work may go on	E	A	O
77.	Stamina, persistence	E	A	O
78.	Ability to formulate realistic plans and goals	E	A	O
79.	Ability to know when to respond to interpersonal cues	E	A	O
80.	Ability to create symbols of group identity	E	A	O
81.	Ability to recognize opportunities when available	E	A	O
82.	Concern for public image of the company or product	E	A	O
83.	Ability to address conflict directly and tactfully	E	A	O
84.	Ability to negotiate individual interests to create a result satisfactory to all	E	A	O
85.	High capacity for work	E	A	O
86.	Managerial experience	E	A	O
87.	Ability to confine decision-making to the "operating" level	E	A	O
88.	Ability to match resources to tasks	E	A	O
89.	Ability to balance personal responsibility against the need for delegation	E	A	O
90.	A definite sense of one's career path	E	A	O

	FIRST: Cross out any item that is not relevant to management performance.	SECOND: If this is absolutely essential to consider for hiring or training a person in your present position, Circle Ⓔ	THIRD: (Circle A or O)	
			If average performers in management have this, Circle Ⓐ	If only outstanding managers have this, Circle Ⓞ
			(DO NOT CIRCLE BOTH)	
91.	Ability to exercise power effectively	E	A	O
92.	Ability to balance customer or client demands against company needs	E	A	O
93.	Sponsorship within the organization	E	A	O
94.	Ability to successfully alter intended courses of action, if necessary	E	A	O
95.	Willingness to be a team player	E	A	O

96.	Creativity	E	A	O
97.	Relevant technical skills	E	A	O
98.	Ability to conceptualize	E	A	O
99.	Ability to assert authority, exercise leadership	E	A	O
100.	Ability to negotiate viable alternative courses of action	E	A	O

101.	Ability to make decisions in the face of several alternatives	E	A	O
102.	Ability to discriminate regarding what and when to delegate	E	A	O
103.	A high need for achievement	E	A	O
104.	Ability to provide technical information to subordinates, peers, and superiors	E	A	O
105.	Ability to carry out directives from above appropriately	E	A	O

	FIRST: Cross out any item that is not relevant to management performance.	SECOND: If this is absolutely essential to consider for hiring or training a person in your present position, Circle Ⓔ	THIRD: (Circle A or O) If average performers in management have this, Circle Ⓐ (DO NOT CIRCLE BOTH)	If only outstanding managers have this, Circle Ⓞ
106.	Ability to balance company loyalty against family loyalty	E	A	O
107.	Ability to take decisive, firm positions	E	A	O
108.	Reliability, consistency	E	A	O
109.	Ability to make decisions that will improve the general status of the company	E	A	O
110.	Common sense	E	A	O
111.	Ability to function effectively in a context of conflicting information	E	A	O
112.	Ability to conceptualize the "real" versus the "ideal"	E	A	O
113.	Ability to synthesize	E	A	O
114.	Ability to push one's own ideas forward despite opposition	E	A	O
115.	Effective knowledge of communications skills	E	A	O
116.	Willingness to seek information from a variety of sources	E	A	O
117.	Concern for the self-image one projects to others	E	A	O
118.	Ability to use available technical knowledge in making decisions	E	A	O
119.	Maturity	E	A	O
120.	A belief in people	E	A	O

	FIRST: Cross out any item that is not relevant to management performance.	SECOND: If this is absolutely essential to consider for hiring or training a person in your present position, Circle Ⓔ	THIRD: (Circle A or O) If average performers in management have this, Circle Ⓐ	If only outstanding managers have this, Circle Ⓞ (DO NOT CIRCLE BOTH)
121.	Ability to deal with concepts as well as facts	E	A	O
122.	Ability to put limits on affiliation in the interest of the task	E	A	O
123.	Ability to formulate plans to achieve job objectives	E	A	O
124.	Strategic contacts in the management system	E	A	O
125.	Ability to build coalitions to accomplish tasks	E	A	O

126.	Ability to delegate authority appropriately	E	A	O
127.	Ability to maintain consistent expectations	E	A	O
128.	Ability to manipulate the system	E	A	O
129.	Willingness to disseminate information to subordinates	E	A	O
130.	Ability to observe accurately	E	A	O

131.	Ability to use feedback and feedback opportunities constructively	E	A	O
132.	Ability to perceive when the company's goals and one's own goals mesh	E	A	O
133.	Ability to measure progress	E	A	O
134.	Ability to manage external pressures and influence effectively	E	A	O
135.	Self-control	E	A	O

	FIRST: Cross out any item that is not relevant to management performance.	SECOND: If this is absolutely essential to consider for hiring or training a person in your present position, Circle Ⓔ	THIRD: (Circle A or O)	
			If average performers in management have this, Circle Ⓐ	If only outstanding managers have this, Circle Ⓞ
			(DO NOT CIRCLE BOTH)	
136.	Ability to function effectively in a context of conflicting expectations	E	A	O
137.	Spontaneity	E	A	O
138.	High visibility to peers and superiors	E	A	O
139.	Ability to present a clear position and press for a decision when required	E	A	O
140.	Flexibility, adaptability	E	A	O
141.	Ability to relate to the community in ways relevant to the company	E	A	O
142.	Ability to recognize change and modify behavior accordingly	E	A	O
143.	Ability to inspire others	E	A	O
144.	Ambition, a desire to succeed	E	A	O
145.	Accountability for decisions	E	A	O
146.	Ability to apply explicit frameworks or theories to interpret events	E	A	O
147.	Knowledge of the organizational system's operation as a whole	E	A	O
148.	Ability to design and monitor control systems	E	A	O
149.	Concern with the work of subordinates in terms of overall trends, processes, and resources	E	A	O
150.	Sustained belief in one's own work as valuable	E	A	O

	FIRST: Cross out any item that is not relevant to management performance.	SECOND: If this is absolutely essential to consider for hiring or training a person in your present position, Circle Ⓔ	THIRD: (Circle A or O) If average performers in management have this, Circle Ⓐ	If only outstanding managers have this, Circle Ⓞ (DO NOT CIRCLE BOTH)
151.	Ability to evaluate outcomes	E	A	O
152.	Enthusiasm	E	A	O
153.	Ability to self-assess accurately	E	A	O
154.	Ability to persuade others	E	A	O
155.	A conforming personality	E	A	O

156.	Ability to adapt one's communication style to the audience	E	A	O
157.	Ability to ensure that practical constraints are considered in decision-making	E	A	O
158.	Initiative, self-motivation	E	A	O
159.	Ability to develop and document viable alternative courses of action	E	A	O
160.	Aggressiveness	E	A	O

If there are any items which we have not included that you believe are important to management performance, please note them in the space below.

161.		E	A	O
162.		E	A	O
163.		E	A	O
164.		E	A	O
165.		E	A	O

APPENDIX IV

MANAGEMENT CAREERING QUESTIONNAIRE

Marcia Mentkowski James Bishop

Office of Research & Evaluation
ALVERNO COLLEGE

Funded by a grant from the National Institute of Education:
Careering After College: Establishing the Validity of Abilities
Learned in College for Later Success
(NIE–G–77–0058)

Principal Investigators:
Marcia Mentkowski
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Acknowledgements

Celestine Schall, Director of Career Development, Alverno College, contributed the final two questions.

Note: The statement : "Please return completed questionnaires within two weeks. Thank you for your cooperation." is printed on the cover of this instrument.

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PLEASE DO NOT
WRITE IN THIS
COLUMN.

DATE ____/____/____ #__________

(9-10) What is your official job title? ______________________

What is the title of the position to which you report? ______________________

What are the titles of the positions reporting officially to you?

(11-12) How many persons, in all, officially report to you? ______________

Would you please list the responsibilities of your position, as you see them? ______________________

(13-14) How long have you been in your present position? __________ (yrs./months)

What positions have you previously held in this company?
(PLEASE BEGIN WITH THE IMMEDIATELY PRECEDING POSITION AND WORK BACK)

(15-16) A. ______________________

(17-18) From__________ To__________

(19-20) B. ______________________

From__________ To__________

(21-22) C. ______________________

(23-24) From__________ To__________

PLEASE DO NOT
WRITE IN THIS
COLUMN.

_______ (25-26) D. ____

_______ (27-28) From ______________ To ______________

_______ (29-30) E. ____

_______ (31-32) From ______________ To ______________

_______ (33-34) Altogether, how long have you been with this company? ______________
______________________________________ (yrs./months)

_______ (35-36) What position, if any, did you hold just prior to joining this company?
(If none, indicate here______________)

_______ (37-38) From ______________ To ______________

* _______ (39-40) *IF NONE: What was your main activity prior to joining this company? (e.g., housewife, student, etc.)______________
____

_______ (41-42) In what year were you born? ______________

_______ (43) What is the highest educational degree you have attained? ______________
____

_______ (44-45) What was the name of the school or college where this degree was received?
____

_______ (46-47) In what field was your degree granted? ______________

_______ (48-49) In what year was your degree granted? ______________

_______ (50-51) In all, how many years of formal education have you had? ______________
____

_______ (52) Are you currently enrolled in any educational institution?

Yes__________ No__________

* _______ (53-54) *IF YES: What institution is this? ______________
____

* _______ (55) *IF YES: What degree are you working toward?______________

_______ (56) Have you ever completed a formal management training program?

Yes__________ No__________

* _______ (57-58) *IF YES: Where was this? (School or company name) ______________
____

PLEASE DO NOT
WRITE IN THIS
COLUMN.

*________ (59-60) *IF YES: In what year did you complete this program? __________

________ (61) Are you currently SINGLE_____ MARRIED_____ DIVORCED_____

________ (62-63) What was your father's main occupation as you were growing up?
____

________ (64-65) What was your mother's main occupation as you were growing up?
____

________ (66-67) How many brothers and sisters do you have who are older than you?

________ (68-69) BROTHERS__________ SISTERS__________

________ (70-71) How many brothers and sisters do you have who are younger than you?

________ (72-73) BROTHERS__________ SISTERS__________

*________ (74-75) *IF MARRIED: What is your husband's current occupation? __________
____

________ (76-77) How many children or other dependents do you have (other than your husband) for whom you have or share responsibility for support?

NONE_____ 1_____ 2_____ 3_____ 4_____ 5 or more____________________

NOW WE WOULD LIKE YOU TO ANSWER A FEW QUESTIONS RELATING SPECIFICALLY TO YOUR PRESENT POSITION AND YOUR CAREER.

________ (9) Do you expect to be promoted within the company from your present position?

YES__________ NO__________ NOT SURE__________

*________ (10-11) *IF YES: When do you expect to be promoted? ____________________
____

________ (12-13) What activities related to your position in the company do you engage in, aside from company-sponsored functions?. (E.g., attending professional meetings, memberships in management associations, publication, etc.)

PLEASE DO NOT
WRITE IN THIS
COLUMN.

____
(14-15)

Please give an estimate of the ANNUAL PERCENT OF INCREASE in your salary, on the average, over the past 3 years. ____________%

(If you have been with the company less than 3 years, please indicate the percent increase since starting with the company.)

____
(16)

How satisfied would you say you are with management as a career?

Very satisfied______________ Somewhat dissatisfied__________

Somewhat satisfied__________ Very satisfied_________________

Please describe the characteristics you feel are necessary for a person to perform effectively in a position like your own.

1. ______________________________

____

2. ______________________________

____

3. ______________________________

____

4. ______________________________

____

5. ______________________________

____

6. ______________________________

____

7. ______________________________

____

8. ______________________________

____

9. ______________________________

____

10. ______________________________

____

___/___/___ ID #______

How would you evaluate the opportunities for women coming out of college and into a management career today in MIlwaukee? (FOR EMPLOYMENT and CAREER; BE AS SPECIIFC AS POSSIBLE)

How would you describe the best possible background for women going into management careers today?(EDUCATION as well as OTHER PREPARATION)

ALVERNO COLLEGE
OFFICE OF RESEARCH & EVALUATION

BEHAVIORAL EVENT INTERVIEW WRITE UP

Funded by a grant from the National Institute of Education:
Careering After College: Establishing the Validity of Abilities
Learned in College for Later Success
(NIE–G–77–0058)

Principal Investigators:
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Austin Doherty
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Milwaukee, Wisconsin 53215

Acknowledgements

This form accompanies the Behavioral Event Interview (McClelland, 1978) used in Mentkowski, O'Brien, McEachern and Fowler, 1982, and is adapted from one developed by McBer and Company.

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Date: ______________________________ ID # ______________

Company type: ____

Job Title: ____

Reports To: ____

Reports to Interviewee: ____________________________________

____

____

____

____

____

____

____

Responsibilities:

1. ____
2. ____
3. ____
4. ____
5. ____
6. ____
7. ____
8. ____
9. ____
10. ____
11. ____
12. ____
13. ____
14. ____
15. ____

___/___/___ SITUATION # ________ ID # _______

Effective _____ Ineffective _____

SITUATION:

WHO INVOLVED?:

BEHAVIOR:

___/___/___ SITUATION # ________ (continued) ID# ________

THOUGHTS/FEELINGS:

RESULT:

__/__/__ SITUATION # ______ ID # ______

Effective ____ Ineffective ____

SITUATION:

WHO INVOLVED?:

BEHAVIOR:

___/___/___ SITUATION # ________ (continued) ID# ________

THOUGHTS/FEELINGS:

RESULT:

__/__/__ SITUATION # _______ ID # _______

Effective _____ Ineffective _____

SITUATION:

WHO INVOLVED?:

BEHAVIOR:

___/___/___ SITUATION # ________ (continued) ID# ________

THOUGHTS/FEELINGS:

RESULT:

___/___/___ SITUATION # ________ ID # _______

Effective _____ Ineffective _____

SITUATION:

WHO INVOLVED?:

BEHAVIOR:

__/__/__ SITUATION # ________ (continued) ID# ________

THOUGHTS/FEELINGS:

RESULT:

___/___/___ SITUATION # ________ ID # _______

Effective _____ Ineffective _____

SITUATION:

WHO INVOLVED?:

BEHAVIOR:

__/__/__ SITUATION # ________ (continued) ID# ________

THOUGHTS/FEELINGS:

RESULT:

12

___/___/___ SITUATION # ________ ID # _______

Effective _____ Ineffective _____

SITUATION:

WHO INVOLVED?:

BEHAVIOR:

__/__/__ SITUATION # ________ (continued) ID# ________

THOUGHTS/FEELINGS:

RESULT:

___/___/___

ID# ________

CHARACTERISTICS:

1. ____________________
2. ____________________
3. ____________________
4. ____________________
5. ____________________
6. ____________________
7. ____________________
8. ____________________
9. ____________________
10. ____________________

APPENDIX VI

Example of One Situation Illustrating the Behavioral Event Interview Writeup

What happened? What led up to it?

I had worked for a consumer product company. When I first came to work here the nature of this company's products was new to me. I was very uncomfortable with the terminology people used. These people I was dealing with had been with the company many years. I set up meetings with various divisions to review their marketing plans with them.

Who was involved?

Fifteen marketing directors and myself.

What did you do?

I went individually to get acquainted with some of the directors before our meetings. I reviewed their marketing plans prior to meeting with them.

From that I developed a year-long public relations plan: "Here's a schedule of various releases and literature you should send out relative to the product. This product is significant enough to have a news release."

Through talking with them I also set up parameters based on the products and customers. By giving them parameters I could ask them of their new product, "Does it fit this bill? OK. The trade show you'll be introducing it at would be an ideal time for a news conference." We also discussed any articles that could be written.

I followed thru, kept them informed of what we've done, the timing of it and mailed them news clippings.

What were your thoughts and feelings?

I was not sure of the products and to whom they were sold. I was very confident in setting up these meetings, reviewing marketing plans and developing P.R. plans, sure of my ground in that area.

I was very aware I was asking extremely basic questions. I was aware of being new and different. I was very careful and didn't want to embarrass this department by appearing too "green".

What happened as a result?

It's helped this division to get acquainted with the markets.

The meetings not only helped directors but also helped me become acquainted with the various products we market. Our department might have put out the same type of work, but I don't think I would have understood it as well.

It took time, but I was also helping my assistant to learn. I was putting my organizational skills and his knowledge of the company together.

I don't have that feeling of having to account for my background.